Croonian Lectures
ON
SOME APPLICATIONS OF PHYSICS TO MEDICINE.

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LECTURE III.—PART I.
ON CARDIAC AND ANEURISMAL TENSION.

ONE of the most fundamental conceptions of the circulation seems, singularly enough, to be among those least appreciated by the mass of observers: that, namely, which shows that the arterio-capillary-venous network is essentially a closed cell, obeying the usual physical laws of fluid in a pent-up cavity; only partially and secondarily affected by the motion imparted to the fluid contents. Mathematically speaking, circulatory or rotatory motion, whatever may be its rate, only influences *ab extrâ* the stability of the system, and has no visible or appreciable effect on its internal tension. The equable hydrostatic pressure of such a closed cavity, as Dr. Clifford Allbutt showed many years ago, acts independently of local agencies. The blood is not in the condition of a freely flowing stream, but firmly held, under varying degrees of tension, in a limited area; although still able to show therein evidences of momentum due to varying velocity, such as were adverted to in a former lecture, yet never entirely losing its statical or tensional constituent. This tension, considered as a whole, would exist even if the heart were inoperative. As it is, it declines gradually, under propulsive force balanced by friction and other hindrances, from the aorta to the right auricle, and thence through the pulmonary circuit, leaving its total sum—a near approximation to zero; the same as that of a mass in a state of equilibrium. This declension, however, is obviously not complete, since some tension still exists in the large veins, and is utilised in bloodletting; although the leaping stream, so much admired by older physicians, is materially assisted by an obstacle placed on the homeward side of the returning current. It is to be regretted that recent writers have to some extent ignored this obvious and fundamental hydrostatic law, and drawn distinctions between the rupture of aortic valves subtending or not subtending certain orifices of coronary arteries.

Arterial tension, like that of the purely physical tubes already described, is clearly compounded of two elements—first, the elastic tension of the ramified arterial cell; and, secondly, the propulsive or dynamic force of the heart. These were, until lately, difficult to distinguish, and liable to be confounded with one another. But the brilliant experiments of Dr. Otto Rosenbach brought before the Pathological Institute of Breslau, and detailed in the *Archiv für Exp. Pathologie*, enable an approximative, if not exhaustive, differentiation to be made. They have already been accurately abstracted in THE LANCET of Nov. 2nd, 1878, but they are so pertinent to the present subject of these lectures as to require quotation in some detail:—

"The points for investigation were: (1) What influence on the blood-pressure has the destruction of one or of several valves? (2) Does compensation occur immediately, or only after a certain time? How is it produced, and how far is the supplemental power of the heart effective? (3) When, and under what circumstances, is endocarditis produced, and what are the consequences thereof? (4) What conclusions of clinical interest are suggested by the experiments? The observations were made on dogs and rabbits, both with the assistance of curara and morphia, and (in rabbits) without. The blood-pressure was measured in the crural or carotid artery. The aortic valves were injured by means of a sound introduced into the right carotid artery, the injury to the valves being immediately manifest by the effect on the sounds of the heart and upon the pulse. The mitral and tricuspid valves were damaged by means of the valvulotome of Klebs, by which the mitral valve can be divided by the introduction of the instrument through the carotid artery into the left ventricle, and the tricuspid valve by its introduction through the jugular vein. The significance of the first point investigated—the effect of the valvular lesion upon the blood-pressure—is very important. The same forward movement of the blood will require an increased exertion of the muscular tissue of the heart, if a resistance is interposed, as in stenosis, or an increased mass of blood has to be moved, as in regurgitation through the aortic orifice. If this increased power is brought into operation gradually, in consequence of an increase in the muscular tissue—hypertrophy &c.,—the damage to the valve will be followed immediately by a greater or slighter fall in the arterial pressure. The answer which experiment gives to the question is that there is no such fall. Before and after the operation the blood-pressure is precisely the same. Moreover, immediately after great valvular damage, the blood-pressure may be a little higher than before the operation, probably in consequence of the mechanical irritation of the muscular tissue of the heart-muscle, or of a reflex stimulation through the vaso-motor nerves. When this immediate disturbing effect has passed away the pressure is found to be just the same. The permanent over-action of the heart necessary to maintain the blood-pressure leads to its hypertrophy. The reserve of force which the heart possesses enables it to maintain its due action from the first. This effect is the same whether the valvular change is one by which obstruction or incompetence is produced. It is evident, therefore, that the latent reserve of cardiac force is a very large one, and the reserve is manifestly of paramount importance for the maintenance of the circulation. Several of Rosenbach's experiments show that this reserve maintains the pressure, even in the face of grave valvular damage, for many weeks—until, indeed, hypertrophy is developed. The details of the experiments prove that in all cases the first structural change was dilatation, and that the hypertrophy was secondary in time to the dilatation, but never sufficient to effect a perfect structural compensation, although dynamically the compensation was complete. Another point of interest is that there was very constantly developed an aneurismal dilatation of the apex of the heart, and also a fibrous degeneration of the mitral papillary muscle."

It is deserving of note that the dynamic force of the heart which constitutes the second element above named, being thus disposed of, we have a distinct means of influencing the first therapeutically by the use of ergot. This suggestion, although vaguely commented on by many observers, I first received in a practical form from my colleague, Dr. Ord, and I was able to verify it experimentally in the case of an aneurism described at a later period of the course. Here it may be concisely stated that the stimulating power of this substance on unstriped muscular fibre, by producing constriction, decidedly lessens the impact or "thud" of the blood column on the vascular parietes. After a time, however, the effect, quite distinct at first, lessens, either from diminution of vaso-motor spasm, or from yielding of the non-muscular aneurismal walls themselves.

It is equally obvious that with a practically incompressible fluid such as blood, the opening of the closed circulatory cell, for a time at least, reduces the tension; and that, speaking again mathematically, to an infinite amount. Of this, I propose now to offer some sphygmographic evidence.

[*Tracings were shown in the oxyhydrogen lantern, taken from a case of cerebral hæmorrhage, accompanied by much arterial disease, and by a large, hard, full pulse, such as would have been held fifty years ago as a distinct indication for bloodletting. The blood was here abstracted by cupping, and was followed by low tension and dicrotism. It was incidentally noted that cupping, when well performed, produces a more marked and sudden effect on the pulse than venesection, and probably involves a larger vascular area.*]

Now in aneurism, especially of the larger arterial trunks, we have an addition of a new part to the normal circulatory system. This, physically considered, is exactly the correlative of the reservoir or air-chamber added to the force pump of the ordinary fire-engine by way of producing a continuous instead of an intermittent stream. It is a large cistern or diverticulum of comparatively feeble elasticity appended to the normal apparatus. (1) It has to be filled, wholly or partially, at each cardiac stroke. (2) It takes an appreciable time to empty. Hence, in examining the sphygmographic tracing of such a machine, besides the

necessary increase of propulsive power, and the loss of energy in overcoming the inertia of an increased blood-mass, we have a visible pause at the highest pressure, causing a rounded top to the curve. This I believe to be one of the earliest trustworthy signs of arterial dilatation, though, of course, it is incompetent to distinguish between the effects of general enlargement and those of a localised sacculation.

But when the cavity of the aneurism becomes large comparatively to the normal capacity of the vascular cell, a still further phenomenon may be distinctly observed. A secondary wave forms in the receptacle itself, which gives a notched or bifurcated apex to the tracing. This peculiarity has been termed dicrotism; but injudiciously, for although the word may, in a purely etymological sense, be so applied, it seems to indicate a causation similar to that which follows from the exhaustion and extremely low tension of febrile or other diseases, with which it has not a single point of real similarity. In some of Dr. Mahomed's earlier communications to the *Medical Times* (vol. xliv., p. 221), I find an artificial schema of the healthy circulation figured, which at first sight appears to reproduce this misconception; though, from later papers which he has since been courteous enough to send me, I willingly acknowledge that he has become fully alive to the point insisted on. [*Tracings illustrative of this fact were shown on the screen.*] An approximative estimate of the tension in the sac of an aneurism may be obtained by the same method as that employed for ovarian cysts. It will thus be seen that the hydrostatic force rises rapidly as the sac enlarges; in fact, in a modified geometrical ratio, as against a simple arithmetical increase of the heart's impulse. We are thus from the first losing ground, and the malady is gaining on us according to some simple function of the fundamental law of equality of pressure in all directions. Dr. Haughton estimates the hæmastatical pressure of the blood in the human arteries as equal to a column of 9·923 feet. Donders gives it as 3·21 metres, or 10·527 feet. Taking the aneurism as of 3 inches in diameter, its internal surface will be 28·2744 square inches, which, with the lower estimate of blood-pressure, gives a tension of 12·247 lb. If the sac rise to 4 inches diameter, this increases to 50·2656 inches of surface, and to a tension of nearly 25 lb.

Clinical Lecture
ON
LITHOTOMY.

Delivered at the Liverpool Royal Infirmary,

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GENTLEMEN,—Within the last few weeks you have seen me operate upon three cases of stone in the bladder, and in each instance lateral lithotomy was successfully practised. In one, this mode of operating had to be adapted to permit the removal of a calculus not only unusually large but exceedingly rare. Sections of the calculi, prepared for me by Mr. Bryson of Edinburgh, are now before you, and after you have examined them I will place before you the particulars of each case, together with comments upon them.

The first case in which I operated was that of J. L——, a boy aged sixteen years, from whom I removed the mulberry calculus, studded over with irregular prominences, and which weighs 83 grains. He had suffered from the more prominent symptoms of stone for only a few weeks—that is to say, pain at the end of the penis and after micturition, together with an irritable condition of the bladder; but on inquiry we find he had had nocturnal incontinence from childhood. On introducing a sound into the bladder, a calculus was distinctly felt.

On Feb. 25th, 1879, I performed lateral lithotomy. The operation was not attended with any difficulty, nor was there such hæmorrhage as to require the ligature of a vessel. The patient was put to bed, *and kept within warm blankets until reaction had set in.* This was a point in the after-management of cases of lithotomy upon which the late Mr. Southam, a most successful lithotomist, laid great stress.[1] It is well that you should be reminded, in considering the steps of an operation, of those details to which, in a large measure, successful operators attribute their success.

The operation was followed by a slight rise in temperature. On March 6th the patient passed urine for the first time naturally; this was succeeded by a rigor. On April 1st the wound had healed, and the boy left the hospital.

From the history of this case it is exceedingly probable that the patient had suffered from stone since childhood, and that it was the cause of the incontinence of urine. The section of the calculus would warrant this assumption: oxalates slowly concrete, being in this respect a contrast to phosphates, phosphatic stones often forming rapidly.

Incontinence of urine in children is frequently occasioned by causes other than stone. It may be symptomatic of worms, or of irritation produced by an elongated or adherent prepuce, or by tubercular deposit within the bladder. When incontinence of urine continues in spite of treatment and in the absence of such causes as I have indicated, the bladder should be examined for stone. I have not the least doubt, in this case, that the persistent incontinence was due to the presence of stone.

When a child, or an adult, has to be sounded, do so with the assistance of an anæsthetic. In many instances sounding becomes a very delicate operation; and unless you examine a patient under the most favourable circumstances, so far as your special object is concerned, a small calculus may escape detection. It is sometimes more difficult to find a stone than to remove one. When a patient is writhing or struggling with you, it is impossible to make your observations so precise as when he is unresisting.

The progress of the case towards recovery was not checked by one untoward circumstance. The rigor immediately following the first passage of urine along the natural channel created no apprehension, as this is not by any means an unusual circumstance.

My second case was also that of a boy, Thomas R——, aged fourteen years, who had suffered from symptoms indicating vesical irritation for over ten years. He, like the other boy, suffered from incontinence at times, and pain after micturition. The pain in this case was chiefly referred to the end of the penis, to relieve which the patient had been in the habit of dragging at his prepuce until he had greatly elongated and hypertrophied it. I never saw a case where this symptom was so well marked. When you find a child continually pulling the end of his penis, whilst at the same time he suffers from nocturnal incontinence, you may almost certainly predict that he has a stone in the bladder. The patient had also passed blood occasionally, and had retention of urine, for which catheterism was employed. From the history which was furnished to me by the practitioner who kindly sent me the case, it appears that on one of these occasions, when either catheterism or sounding was employed, some damage had been done to the parts about the neck of the bladder; for, though the patient had all the symptoms of stone, yet none could be felt by my friend who had previously examined the patient, the sound not appearing to be within the cavity of the bladder. That there was something unusual I felt sure, as it was not until I had sounded the boy for the second time that I could determine the presence of a stone.

On Feb. 20th I had the patient brought into the operating theatre for the purpose of performing lithotomy. On the staff being passed it appeared to me to be again in the wrong position previously noticed, and the calculus could only be very indistinctly felt. Rather than incur the risk of doing damage by attempting to get the staff in its proper position, or operate with any uncertainty as to its position before me, I sent the patient back to his bed, feeling sure that it would be better to try again rather than run any risk.

On March 5th the patient was again placed on the operating table, when I succeeded in introducing the staff to my satisfaction. The operation of lateral lithotomy was performed without difficulty, some rather hard cicatricial tissue about the membranous portion of the urethra, probably indicating the position of the false route, being cut through. A mulberry calculus, with a phosphatic circumference, and weighing 111 grains, was removed. The operation was followed by a slight rise in temperature, as in the previous

[1] In the obituary notice of this gentleman, in THE LANCET of May 5th, 1875, it is stated "he had performed the operation of lithotomy one hundred and twenty times, and had only lost one patient."

case; but the patient's progress was in every respect most satisfactory, and he was able to return home on April 16th.

In this case I have only one observation to make, and that has reference to the postponement of the operation. No one would be justified in proceeding to lithotomise if he had any doubt as to the position of the staff. I preferred to disappoint the large number of students assembled in the theatre, as well as myself, rather than run the risk of operating with the staff in a false position. The whole success of lithotomy depends upon this, and to start with the least doubt upon such a point is to introduce a grave element of embarrassment, which, should it prove to be so, would probably lead to the operation being abandoned after a deal of fruitless searching, if not to the death of the patient. I preferred to disappoint rather than incur such a risk, feeling assured that on a future occasion the instrument would be introduced without difficulty. The course of events justified this anticipation, and the operation was performed as correctly as if nothing had gone wrong.

Something wrong in the introduction or manipulation of the staff has more frequently led to embarrassment than anything else in performing lithotomy: either the staff has been wrongly passed, or it has been withdrawn before the operator has entered the bladder, or the knife has not been kept steadily in the staff, are sources of error which occasionally even competent surgeons have had to regret. Hence you cannot be too careful in regard to this point, remembering that your staff is your only guide in any difficulty that may arise in reaching the bladder.

My third case is perhaps the most interesting of the series, inasmuch as it furnishes us with an example of the rarest form of urinary calculus—namely, the cystine or cystic oxide, so called by Wollaston; and further interest is attached to this specimen as I believe it to be the largest that has hitherto been removed by lithotomy.

James D——, a labourer, aged twenty-one years, was admitted on Feb. 19th, 1879, with the usual symptoms of stone in the bladder. From his history it would appear that his symptoms had extended over four years. Two years ago he had had retention requiring catheterism, when a piece of calculus was removed from the urethra.

On his admission, from the measurements of the stone with the lithotrite, taken at the time of sounding and whilst the patient was under ether, I deemed the case one where it would be preferable to employ lithotomy rather than lithotrity.

I operated on the same day as the first case, making my external incision somewhat freer than usual, as I knew that I had a large stone to deal with. On grasping the calculus with the forceps, I found it well up behind the pubes and too large to remove without a further division of the prostate. This I accordingly made with a straight probe-pointed knife. This gave me the necessary room, and the calculus was removed without the employment of such an amount of traction as would be likely either to tear or contuse the parts about the neck of the bladder. The operation was attended with pretty sharp hæmorrhage, and as it was general and there were no arteries to tie, I introduced into the wound Mr. G. Buckston Browne's dilatable tampon. By this means the hæmorrhage was at once controlled.

So far as the progress of the case was concerned I have very little to add; though his temperature for the first few days was higher than in the previous case, and there was more constitutional disturbance, yet we never had any serious ground for alarm, and the patient made a good recovery.

Cystic oxide calculi are comparatively rare. Sir Henry Thompson, in his analysis of five hundred cases operated upon (Med. Chir. Trans., 1878), appears to have met with only one instance, an experience which corresponds with that of other surgeons who have enjoyed exceptional opportunities of seeing this class of disease. This specimen, which weighs 1050 grains, is also interesting as being the largest of its kind that has hitherto been described, exceeding the one in University College Hospital museum, removed by Liston, by two hundred grains. It consists almost entirely of cystine, microscopical specimens of which crystals you will see arranged under the microscope.

There are one or two other points in this case to which I would wish to direct your attention before closing my lecture. In the first place, the case illustrates the great assistance that is rendered by the lithotrite in accurately determining the shape and dimensions of the calculus before practising lithotomy, thus preparing the operator for any difficulties, and the best means of meeting these which may arise so far as the extraction of the calculus is concerned. Here, from my measurements, I prepared myself beforehand, should difficulty arise, to make a bilateral section of the prostate, as advised by Dupuytren. I am very much opposed to exercising, especially with adults, too much extracting force. It is not unfrequently this that causes a sloughy condition of the internal wound, and, by loosening the connexion of the bladder, aids in the production of pelvic cellulitis, which is so fatal. Dilate as much as you can, but remember that it is better to cut than to tear or contuse.

In the last place, in Mr. Browne's tampon I found a most efficient means for arresting the hæmorrhage. The apparatus has already been described in THE LANCET (Sept. 15th, 1877). Of all the expedients I know of for this purpose I believe it to be the best, and as such recommend it to all who are about to undertake the operation of lithotomy.

In all the cases the staff was held for me by Mr. Rushton Parker; and I am indebted to my dressers, Messrs. Barrow, Porter, and Renner, for the notes on which these remarks are based.

THE RHEUMATIC ORIGIN OF CHOREA.

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(Continued from vol. ii. 1878, page 284.)

ON the 31st of August of last year I published in THE LANCET an account of seventy-one cases of chorea which had been observed with special reference to the connexion between this affection and rheumatism. From a review of these examples two conclusions were suggested—one, that between acute rheumatism and chorea there existed a direct and immediate causal relationship, and that this was evidenced, not by the number of instances, since these were comparatively few, but by their mode of occurrence; the other, that the connexion between chorea and other forms of rheumatism, or what has been called the "rheumatic diathesis," was both improbable in itself and unsupported by facts.

Of the cases thus dealt with special stress was laid upon a series of 51, supplied by the Hospital for Sick Children, the reason for this preference being that these patients were sent to the chronic department of the hospital (where I first saw them), with their histories already recorded, and that in this way the operation of any bias of my own was excluded. Since that paper I have collected in similar manner 49 additional cases, making a total of 100 from this source. This number will thus represent all the examples of chorea admitted into the chronic wards from Sept. 1876 to Sept. 1879. During that time Dr. Garlick and Dr. Abercrombie have been the registrars in succession. The facts have been set down in every instance from their careful notes, the question of rheumatism being specially kept in view. The full history of the 100 cases is at present among the records of the Hospital for Sick Children.

It will be seen, by reference to the first paper, that of the 51 cases (14 boys and 37 girls), acute rheumatism was in the history of only 1, and rheumatism in the history of only 6, 2 of these being marked as "doubtful," and a third as "very doubtful." Of the 49 cases, completing the number to 100 (the actual entries are 51, but 2 cases were readmitted and appear in both lists), 13 are boys and 36 girls. Rheumatism, not acute, was ascribed to 8, and in 1 of these the pain so characterised immediately preceded the chorea, and may have been its direct cause; 3 had had acute rheumatism, in 1 instance just preceding the chorea; 1 had had pain in the joints, without redness or swelling, and not described as rheumatism, and in 1 the history was imperfect. Thus, there were in all 13 to whom rheumatism might have occurred (counting the doubtful), and 36 to whom it was positively stated not to have occurred.

In 5 of the 8 "rheumatic" just mentioned, the *immediate* cause of the chorea was a definite mental shock, and in a sixth, although no such cause was made out, the child was remarkably shy and timid.

Taking the two series together, or 100 cases, there were in all 20 at the utmost, *including the doubtful*, which might

possibly be associated with rheumatism, and in 3, or perhaps 4, of these rheumatism might stand as its immediate cause; while in 80 cases—44 in the first series and 36 in the second—there was positive evidence against any rheumatic connexion whatever.

This enumeration claims only to be approximately accurate. All who are in the habit of collecting evidence of this sort will be aware that no more than this can be expected. Cases of doubt, however, have been placed on the side of rheumatism, so that it would seem probable that this element is rather over- than under-estimated.

Allowing, however, a considerable margin for error either way, the conclusion to be drawn from these numbers is not doubtful. It would appear from them, so far as children are concerned, that chorea in the great majority of cases, say in four-fifths of them, is apart from rheumatism altogether; and further, that chorea, as the direct and immediate consequence of rheumatism, is a rare event. It will not be denied that 100 cases taken consecutively, and where pains were taken in regard to rheumatism, afford weighty material to be put in evidence upon the question at issue. But the particular conclusion arrived at may be resisted on several grounds. It may be said that the recorders of these cases have adopted a too rigid definition of rheumatism, so as to exclude proper examples of it. The symptoms of rheumatism, it will be urged, occur to children with special modification, and are, on that account, easily overlooked. It may be added that these statistics are in direct conflict with others, and that the balance of testimony is still, on the whole, in favour of an intimate connexion between chorea and rheumatism.

There is a further contention which will be best considered separately. It is that of some physicians who, while admitting that rheumatism is hardly excessive amongst choreic children, yet still maintain the rheumatic association in virtue of their kindred. I would say a word or two upon each of these points.

As regards *the definition of rheumatism*, the account of the parents has usually been accepted. In some few cases there have been joint pains of no specified character, without redness or swelling or definite illness. In these the occurrence of rheumatism was held to be doubtful, although, as has been said, such cases have been included amongst the rheumatic.

As to *the peculiar character of childish rheumatism*, it is true that many authorities lay stress upon the evanescent character of the joint affection in these subjects, and the great frequency with which the heart is attacked. Accepting this observation without reserve, it seems obvious to remark that the original assertion of the connexion between chorea and rheumatism had reference to the limb pains and joint inflammation of the latter disease as we see it at all ages more or less. If this latent form of rheumatism is now to be substituted and the absence of any history of rheumatism to be explained accordingly, we not only make all former statistics worthless, but virtually admit, by raising this new plea, that the original assertion as to the connexion between chorea and rheumatism has broken down. And, moreover, if it be by inflammation of the heart and pericardium rather than by joint pains that childish rheumatism shows itself, it will be safest to connect chorea, not with the rheumatic poison (which is a vague thing at best), but with endocarditis and pericarditis.[1] It must be remembered, besides, that the more we succeed in making rheumatism a common disease amongst children, the more we must expect to meet with it in any collection of subjects whatever, whether of chorea or any other affection, unless, indeed, which no one pretends, the one disorder excludes the other.

The statement that *the results just quoted are at variance with general testimony*, and that, upon the whole, the rheumatic connexion of chorea is supported by statistics, is one which need not be accepted immediately. Of continental opinion it may be enough to say that the French and the Germans are very much at issue upon this point. Trousseau, as is well known, always insisted upon the intimate union of the two affections, and M. Sée finds chorea and rheumatism coinciding in 61 out of 128 cases; in only 32 of these, however, or one-fourth, were the rheumatic signs decisive. M. Roger has disposed of the question summarily, and in language which renders the labour of taking percentages superfluous. He believes that "chorea and rheumatism are one and the same affection under two forms." On the other hand, Romberg lays no stress upon rheumatism as allied to chorea, and declares his dissent from the views of English writers in this respect; while Steiner, of Prague, records 252 cases, only four of which occurred during the course of acute rheumatism. The most recent statistics of our own upon this subject are those of Dr. Dickinson, in vol. lix. Medico-Chirurgical Trans., of Dr. Owen in the St. George's Hospital Reports of last year, and of Dr. Peacock in the eighth volume of the St. Thomas's Reports. There are also the often-quoted cases of Dr. Hughes in the Guy's Hospital Reports. These last, however, owing to their date and other circumstances, which I shall mention presently, seem to require separate consideration. Dr. Dickinson's cases refer to the same hospital, and include the same ages as my own (from two to twelve). In 71 cases as many as 10 are doubtful (they are *marked* as 9, but a tenth case is described in the same terms) as to their antecedents. There remain 61, in 42 of whom rheumatism is absent; 19 at the most had rheumatism somewhere in their history, and in 7 of these it immediately preceded the chorea. 171 cases thus furnish 122 wholly free from rheumatism, 10 without history, and 39 who had rheumatism somewhere in their lives, in 11 of whom this affection might be regarded as cause, or part cause, of the chorea.

These numbers refer to a child's hospital where the utmost age is twelve. General hospitals, where there is no such age limitation, may be expected to yield a larger proportion of rheumatism, inasmuch as with the larger aggregate of years there is more time for accumulating disease. In two tables of the model medical reports of Dr. Owen of St. George's Hospital will be found a collection of 50 cases, 22 of whom were over twelve years old. Of these 50, 34 were without rheumatism, 3 were too doubtful to be reckoned, and 13 had rheumatism in their histories, in 4 of these last immediately preceding and presumably causing the chorea. Adding, therefore, this third list we get 221 cases, which yield 156 wholly free from rheumatism, 13 doubtful, and 52 who had rheumatism somewhere in their lives, of whom 15 had the rheumatism in immediate connexion with the chorea.

In Dr. Peacock's tables dealing with 92 cases, only a portion of whom were children, there are as many as 24 or 26 who had had rheumatism at some time or other, the rheumatic symptoms having immediately preceded the chorea in 7; 53 or 54 were known not to have had rheumatism, and the remainder are variously accounted for.[2] The percentage of rheumatism, therefore, is higher in these than in the other tables, yet still the number of the rheumatic is only just over a fourth of the whole.

There remain for consideration the statistics of Dr. Hughes in the Guy's Hospital Reports of 1846 and 1855. It is necessary to observe of these tables that they were not constructed exclusively from cases under the author's own observation, and that there is no constant purpose pervading them. In many instances rheumatism is not even alluded to. The first series, indeed, is founded upon the supposition, no longer tenable, that the existence of cardiac murmur deposes directly in favour of past rheumatism. We read, therefore, that while 8 cases only had their origin "more or less directly" in rheumatism, "there were only 15, out of the 104 where inquiries were made on the subject, in which the patients were *both* free from cardiac murmur *and* from a previous attack of rheumatism." Such a statement would not differ very widely from the general experience. Some sort of cardiac disturbance is very common with the younger children. This observation, however, can no longer be accepted as determining the question of the proportion of rheumatism. In Dr. Hughes' second series of cases rheumatism finds place in the notes of but 58 out of 209. It so happens that in this casual mention the positive fact of its presence is noted thirty times, and the negative fact of its absence twenty-eight times, or about half and half. Now it is surely unfair to suppose that these numbers at all represent the actual proportion of rheumatism in the whole body of cases. A small number of examples thus casually brought together with a view to illustrate the rheumatic origin of chorea, at a time when such origin is devoutly

[1] Senator, in his lengthy monograph upon rheumatism, alludes to the risk of heart disease amongst the young, and adds: "This" (i. e., the heart disease, and not the rheumatism) "is not unfrequently followed by chorea, especially when the mitral is the affected valve." This one sentence contains the only allusion to chorea. So little do the historians of rheumatism respond to those of chorea upon this subject. (Ziemssen, vol. xvi., p. 57.)

[2] From the elaborate character of Dr. Peacock's Report I find it difficult to summarise it, and would refer the reader to the paper itself, which deals with many other points of interest besides the one here discussed.

believed in, will be certain to give undue prominence to that connexion. It is only by taking a number of examples consecutively over a long period that this disturbing element of choice can be eliminated. Where this is done the results, as I have shown, are not very various, and non-rheumatic chorea is exhibited in overwhelming excess of the rheumatic, the percentage of the former varying from 75 to 85.

But it is said the rheumatism with which chorea is associated appears in the families rather than in the patients themselves. It is impossible, of course, to test this position unless some arbitrary limit is assigned to the relationship. If we do but seek far enough, rheumatism is to be found in every family in the kingdom. I have only noted this point in regard to the second series of 49 cases, and have restricted the inquiry to the immediate family of the patients—that is to say, parents and brothers and sisters, including thus a large number of individuals. The result is as follows: Rheumatism is in the family history of 12 patients out of the 49; 5 of these 12 have themselves had rheumatism, and 7 have not. In 1, or possibly in 2, of the 5 rheumatic patients, rheumatism was, or might have been, the immediate cause of the chorea. In 3 of them the cause was known to be fright. There were 8 patients out of the 49 who were not rheumatic themselves, but of rheumatic family. I do not quote these figures as conclusive, or even wholly reliable. So far as they go, and are accepted, they do not confirm the assertion that choreic children have, as a rule, near relatives who are rheumatic. We may well hesitate to believe a doctrine to which the statistics of rheumatism give no support. At any rate, if rheumatic parents transmit their morbid peculiarities to their children, they may be trusted to transmit first of all a liability to rheumatism. We are thus brought back to consider the question as regards the children themselves, since it is certain that if these are choreic in excess, they must still more be rheumatic in excess.

There is reason to believe, from the figures that have been quoted, allowing sufficient room for error:—

1st. That the proportion of chorea showing antecedent rheumatism does not exceed 25 per cent. of the whole number where children up to twelve years old are taken (viz., 20 per cent. in my own 100, and at the rate of something under 26 per cent. in Dr. Dickinson's 71); and somewhere between 26 and 28 per cent. (viz., 26 per cent. in St. George's 50, and 26 or 28 per cent. in Dr. Peacock's 92) where there is no age limitation.

2nd. That the number of instances where rheumatism, in whatever form, is *immediately* connected with the chorea is very small; being 4 per cent. in my own cases, 7 in Dr. Dickinson's, and from 7 to 8 in Dr. Peacock's and in Dr. Owen's (St. George's).

3rd. That in the great majority of cases of chorea occurring in children supposed to have been rheumatic, the immediate exciting cause of the chorea is no other than that which suffices to produce the same affection in other children who have never been rheumatic.

It is obvious that by no method of argument can these conclusions be made to tell in favour of that *intimate* connexion between chorea and rheumatism which some contend for. Let us say, for example, that 100 instances of chorea yield 25 with a history of antecedent rheumatism. Of these there will be a certain small number representing the proper proportion of rheumatic subjects, which we might expect to find in 100 individuals. What this number should be we know not. Suppose that, on an average, only 5 per cent. of our countrymen get rheumatism in childhood. We have then 20 out of 100 choreic patients charged with rheumatism in excess of the proper number. But physical pain is a well-recognised cause of chorea, so that of the cases that arise immediately out of rheumatism (from 5 to 8 per cent., as we have seen), some may be accounted for, not because of the rheumatism as such, but because of the pain that attends rheumatism. This would still further reduce the number.

There would still remain the examples of chorea to which I have alluded in the first paper as occurring in immediate connexion with *acute* rheumatism, and in virtue of which it may be necessary to admit that the one disease actually gives rise to the other. Although too few to affect perceptibly statistical tables, there are now a considerable number of such cases in our literature. In most of these the subjects are not children, but young people in whom violent and often fatal clonic convulsion (whether chorea or not) arises immediately out of acute articular rheumatism, or interrupts or may even precede it. Such symptoms cannot be dissociated from the other phenomena of the disease which they accompany. They furnish examples, along with those of acute delirium and the several forms of cerebral embolism, of the nervous accidents to which the condition of the blood during acute rheumatic fever gives occasion. In their origin, therefore, no less than in their character and choice of subjects, these convulsions are quite distinct from the chronic disorder of childhood which we are now discussing.

The excess of rheumatism, then, in chorea would seem to be represented, at the utmost, by something between 15 and 20 per cent.—an excess too small to be adduced in support of any *intimate* connexion between the two, but nevertheless needing to be accounted for somehow. The question, in fact, comes to this: whether to believe that "rheumatism" (of nature undefined) confers this extra liability to suffer from chorea, not immediately, but at some future and it may be distant period; or else to believe that the excess of rheumatism is only apparent, and due to the fact that rheumatism shares with chorea both heart disturbance and limb pains, so that symptoms due to the one affection are easily attributed to the other. If the first supposition be adopted, it will be necessary to insist (for here the evidence of statistics is decisive)—first, that the rheumatism which predisposes to chorea is seldom connected with it in point of time, a clear interval occurring between the disappearance of the cause and the arrival of the effect; and, secondly, that the rheumatic children who become choreic require the very same immediate incentive to the disorder as do other children—namely, alarm or mental excitement or nervous shock. If the second supposition be adopted, the prevalent belief in the connexion of rheumatism and chorea is explained upon considerations which yet fail to justify it; while in the lessening proportion of rheumatism in our later statistics we see the operation of that still recent knowledge which makes it possible to discriminate the heart affection of chorea from that of bygone rheumatism.

It is not to the present purpose to notice other arguments of statistics against this asserted connexion. These are to be found, as I believe, in the time of life, the sex, and the geographical distribution of chorea and rheumatism respectively, as well as in the fact that while students of chorea are earnestly contending for an alliance of this kind, the students of rheumatism, with their far richer material and ready admission of complications and sequelæ, give no encouragement to such proposals. The doctrine of the rheumatic origin of chorea, however, is too firmly rooted in this country to be much disturbed by such considerations. We no longer seek to verify this connexion, but are rather occupied in constructing some plausible explanation of it. Everyone has prominently in memory numerous instances of rheumatic children who have become choreic; very few consider that in every consecutive enumeration such cases are far exceeded by the others. Meanwhile the two most prominent and unquestionable facts of chorea pass unregarded: the fact that alarm or mental disquiet is its commonest, and, it may be, its constant cause, and the fact that female children are in overwhelming proportion its favourite subjects.

Wimpole-street, W.

CASE OF

ILIO-FEMORAL ANEURISM SUCCESSFULLY TREATED BY RAPID COMPLETE PRESSURE.

BY SURGEON-MAJOR F. P. STAPLES,
ARMY MEDICAL DEPARTMENT.

PRIVATE J. H——, 73rd Regiment, a tall, well-developed and apparently healthy soldier, aged thirty-nine years, of nearly fifteen years' service, was admitted into the Royal Victoria Hospital, Netley, on May 7th, 1879, suffering from ilio-femoral aneurism, having been invalided on account of it from India. His medical history was unimportant up to the year 1877, when, at Subathoo, a station in the North-west Himalayas, he suffered from an attack of enteric fever. Soon after his discharge from hospital for that illness, in the month of September, he felt a throbbing

swelling in his right groin, but under the belief that it was of venereal origin, he kept his knowledge of it to himself. He marched soon afterwards with his regiment to Lucknow, a proof of his statement that it was not then very inconvenient. At Lucknow, in March, 1878, he found that he was unable to undergo the severe drills which take place at that season of the year, owing to the swelling having become much more painful. He also suffered at this period from palpitation of the heart. He now sought admission into hospital, where the aneurism was at once diagnosed. The medical officer under whose charge the case fell considered that no operative interference was then advisable owing to the indifferent state of the patient's health, and sent him to England.

On admission at Netley the aneurism, which was on the right side, was globular in shape, and measured about three inches and a half in diameter. It presented all the specific signs of aneurismal tumours. Describing it more accurately in its relation to Poupart's ligament, it was found that, although to the eye the line of this ligament appeared to bisect it, yet nevertheless the major portion of the aneurism was pelvic, or, in other words, its origin was iliac. Surgeon-General Longmore, C.B., who in the management of the case gave me the benefit of his large experience, called particular attention to this point with reference to operative interference, and expressed his opinion that there would probably not be found sufficient room to place a ligature upon the external iliac artery, so that, should deligation be determined upon, the operator must be prepared to ligature the common iliac artery.

After full consideration of the case, it was resolved to try the effects of treatment by pressure in the first instance—a plan which concurred with the views of the patient, who expressed very decidedly his determination not to submit to any cutting operation, but had no objection to any other treatment that might be adopted. Arrangements were accordingly made for attempting a cure by complete compression, or, in other words, by locking the blood in the aneurism by means of an Esmarch elastic bandage and a tourniquet. After a few unsuccessful attempts to maintain the tourniquet in proper position, this was successfully carried out on the 5th of June; and, before proceeding further, I am anxious to express my obligations to Mr. Gaisford, now a surgeon in the Indian Medical Service, for his assistance in keeping the tourniquet adjusted under great difficulties, caused by the restlessness of the patient. The Esmarch bandage was first applied from the toes to a line a little above the origin of the profunda artery. A graduated pad of lint was afterwards applied over the course of the common iliac artery, and a Lister's tourniquet adjusted over the pad. A moderate amount of pressure was then found sufficient to command the circulation through the aneurismal swelling. The pulsation in the aneurism was completely arrested at 9.45 A.M. At 10.15 the Esmarch bandage was removed on account of the excessive pain complained of by the patient, and at 10.45 I directed the removal of the tourniquet for the same reason. I was under the impression at this time, from the report which I received of the pulsation, though perceptibly weaker, not having entirely ceased, that the experiment had in a great measure failed, and I resolved to repeat the treatment under chloroform. On examining the patient with this view the next morning, I was pleased to find that any further steps were unnecessary, the aneurism being quite consolidated and pulseless. The limb was then immediately treated in the usual way for ensuring rest and warmth. The subsequent history of the case needs but little remark, as it was one of uninterrupted recovery. For a few days the affected limb had a lower temperature than the other, with a somewhat paler aspect, and the patient complained of a sensation of "pins and needles" in it. These symptoms, however, were never such as to cause the smallest anxiety, and, clinically, perhaps one of the most interesting features of the case was the apparent facility with which the collateral circulation became established. As regards the aneurism itself, it gradually decreased in size, so that at the end of a month from the application of the pressure it merely felt like a simple adenoid tumour, and in size was not larger than a walnut. On the 4th of August, or after two months, it was scarcely distinguishable from one of the inguinal glands.

Remarks.—The foregoing case furnishes a record of the success of pressure in the treatment of an ilio-femoral aneurism of nearly two years' duration. It is also a good example of the success attending that form of rapid pressure which has received the name of absolute or complete temporary compression. Lastly, it may be taken as evidence that, in the application of rapid pressure to pelvic aneurisms, the value of that means is much enhanced by the use of Esmarch's bandage as the lower tourniquet.

Rapid compression being now so fully recognised as the most appropriate form of this treatment for pelvic and abdominal aneurisms, chiefly on account of the instrumental difficulties of carrying out the graduated method, it is not necessary further to allude to it in connexion with this particular instance. It may be useful, however, to ask in what class of cases is this treatment most likely to effect its desired result? Is it most applicable, for instance, to recent aneurisms, or, in other words, to those which can be emptied of their contents? Or is its practice most likely to be successful in older aneurisms, in the sacs of which fibrinous laminæ have already been deposited? Bearing in mind its effects—viz., the production of blood-clot—it might appear proper to give a negative reply to the first question and an affirmative one to the latter, for the following reasons. In recent aneurisms, and in those in which laminated fibrin has not been deposited, the clot, on account of its large size, would offer great facility to the blood-current to break it up; and as its first contraction need not necessarily carry the sac with it, or rather include the sac in the curative process, it would follow that a facility would be given to the blood-current to act prejudicially by insinuating itself between the two. With older aneurisms, on the other hand, in which fibrinous clot has been deposited, the conditions are different, and are such as would appear to favour the success of rapid pressure. In these cases the blood-channel is frequently not greater, and sometimes even less, than the calibre of the diseased vessel, and the clot necessary to arrest pulsation, being thus comparatively small, would, so to speak, offer fewer points of vantage to the disturbing current of the circulation; while the surrounding fibrin, already intimately connected with the sac, would, by its contraction, further reduce the danger from this agency. The above is no doubt speculative reasoning to a great extent, and, as such, the writer begs to apologise for it; but he is not without hope that it may be worthy of the attention of those who are engaged in systematising the treatment of aneurism.

AN ACCOUNT OF A RECENT OUTBREAK OF TYPHUS FEVER IN ST. GILES'S DISTRICT.[1]

BY S. R. LOVETT, L.R.C.P. ED.,
MEDICAL OFFICER OF HEALTH FOR ST. GILES'S DISTRICT.

MUCH interest having been evinced in several recent cases of typhus fever which have occurred in the St. Giles's district, and particularly in some of them which originated in an area embraced by a scheme for its improvement under the Artisans and Labourers' Dwellings Improvement Act, 1875, it may be useful for the facts of the cases, as far as I, as medical officer of health of the district referred to, have been able to ascertain them, to be made public.

For convenience of illustration I divide the cases into two groups.

The first case of the first group occurred on August 22nd, when the house-physician of King's College Hospital informed the medical officer of health of the Strand district that a young woman, Hannah L——, aged thirty, was admitted to the hospital the previous day from Bear-yard, Lincoln's-inn-fields, in the Strand district, suffering from typhus fever. On receiving this information the medical officer visited the house, and ordered the rooms to be disinfected, and ascertained that the woman had slept there about five nights before she went to the hospital for advice, and that previous to her residence in Bear-yard she lived in Lincoln-court, Drury-lane, which is in St. Giles's district. The medical officer of the Strand district gave me the history of the case as far as he knew it, but it was of little use to me, inasmuch as the houses in Lincoln-court, being included in the area con-

[1] A paper read before the Society of Medical Officers of Health.

demned by the Metropolitan Board of Works, were cleared of their inhabitants on the 3rd of August, and were demolished before the woman went to the hospital; it was therefore impossible for her to have been resident in Lincoln-court at the time she stated, but she may have lived there before August 3rd. I was here baffled in my inquiries, and as she died, nothing further could be discovered of her history prior to her living in Bear-yard. The woman died of typhus fever. Did she contract it in Bear-yard? In Lincoln-court (if she lived there before August 3rd)? Or wherever she may have lived between August 3rd and August 16th, the date of her going to live in Bear-yard?

The second case of this group occurred on the 26th Sept., when Mary F——, aged twenty-two, of No. 7, Orange-court, Drury-lane, was reported to be in the same hospital from typhus fever. This young woman left her home on the 16th Sept., and went to Brenchley, in Kent, for "hop-picking," and, complaining of illness whilst there, returned to London on the 20th, and slept in other lodgings at No. 4, Wild-court, Drury-lane, where she remained until the 22nd, when she was admitted into the hospital. Orange-court is very close to and parallel with Lincoln-court; they run from Drury-lane to Great Wild-street, the back yards to the houses in Lincoln-court abut on the public way five feet wide in front of the houses in Orange-court. Did this woman contract the disease in Orange-court or at Brenchley?

The third case.—On 1st October I made inquiries in Orange-court, and found at No. 7, the very house in which Mary F—— lived before she went into the country, a girl named D——, aged thirteen, lying ill, under the care of the medical officer of the guardians of St. Giles's, with febrile symptoms, yet no typical signs of typhus; but being in the same house, grave suspicions arose as to the real nature of the fever. She was removed to King's College Hospital, and the case proved to be a light attack of typhus.

The fourth of the group.—On the same day, 1st October, a girl named E——, aged seventeen, living away from her parents, was found sleeping on the stairs at No. 5, Orange-court, destitute and ill. She was removed to St. Giles's Workhouse, where it was found to be fever, but not of a severe form.

The fifth case occurred thirteen days after the preceding one, and at No. 6, Orange-court. Julia S—— was removed from this house to Stockwell Fever Hospital, and the resident medical superintendent informed me that she was suffering from typhus fever.

Here we have three houses, Nos. 5, 6, and 7, Orange-court, undoubtedly infected with typhus fever.

On the same day, the 14th October, the sixth case occurred, Cornelius S—— (adult) being admitted into King's College Hospital, from No. 7, Orange-court, also suffering from typhus fever.

A week after this date the seventh case, John L——, of No. 7, Orange-court, was removed by the guardians to Stockwell Hospital, and the resident medical superintendent also certified this to be typhus fever.

I now draw attention to a group of cases which appear to have been imported into the parish by hop-pickers who had returned from Kent.

CASE 1.—Jane H——, aged twenty-two, was removed from 28, Little Earl-street, Seven Dials, by the guardians, on Oct. 20th, suffering from typhus fever, to the Stockwell Fever Hospital, where she died a few days after admission. This poor woman's history demands some attention. I have made inquiries, and am informed she was residing in Little Earl-street, and in the middle of September left with a party to go hop-picking in Kent. Her party, with numerous others, occupied a shed, and slept on loose straw. In the first week of October she returned to London and was delivered of a child at the London-bridge Station, after which she went on to her old lodgings in Little Earl-street.

I have no doubt that typhus fever was in the shed where this poor woman slept at Cobham, for I am informed that a girl was there, very hot, feverish, and *covered with spots*. No medical aid was obtained, but a man named M——, brother of Jane H——, took the girl, carrying her part of the way to Gravesend, and sent her up to London by a train. All traces of the girl appear to be lost. M——, the good Samaritan, in a few days afterwards sickened, was conveyed in a fly to Gravesend, and by train to London. He appears not to have gone to his former home, but to St. Thomas's Hospital, where he died of typhus fever.

CASE 2 is Daniel H——, the husband of Jane H——. He was not with his wife, hop-picking, and on his wife's removal to hospital, he changed his lodging and lived at 29, Broad-street, St. Giles's, where he sickened, and was removed by the guardians to Stockwell Hospital on Oct. 31st, with typhus fever.

CASE 3.—Annie O——, aged sixteen, who formed one of the party of hop-pickers, went from 22, Coalyard-yard, Drury-lane, in a cab, to Guy's Hospital, on Nov. 4th, and was certified by the house-physician to be suffering from typhus fever.

CASES 4 and 5.—Mrs. D—— and child were removed from 28, Little Earl-street, on the 7th of November by the guardians to Stockwell Fever Hospital, suffering from typhus fever. Mrs. D—— had acted in the capacity of friendly lying-in nurse to Jane H——.

CASE 6.—On Nov. 14th Mr. D——, husband of the above patient, was removed to Stockwell Hospital, suffering from typhus fever.

CASE 7.—On Nov. 20th another of Mrs. D——'s children was removed to Stockwell, suffering from typhus.

CASE 8.—On Nov. 21st Maria S——, aged nine years, was ill at home at 11, Dudley-street, with typhus fever.

CASE 9.—Ellen H——, aged twenty-five, of 29, Broad-street, was removed to Stockwell Hospital on Nov. 21st suffering from typhus fever.

CASE 10.—Mingold E——, aged twenty-five, a German tailoress, went in an omnibus to Charing-cross Hospital, and was admitted suffering from typhus fever.

On the 7th inst. I went to St. Thomas's Hospital, and was courteously received by the house-physician. I went in order to ascertain if M—— died in the hospital, and to trace the girl who was first seized with illness in the shed at Cobham. I was informed that M—— died there, and I was also much surprised to learn that four other patients had been admitted with typhus fever from St. Giles's district, of which, up to that time, I had no knowledge.

It is impossible for my inspectors to disinfect houses and rooms which have been saturated with infection from typhus fever unless I am informed of the occurrence of the disease in those houses and rooms. Typhus fever cases received into general hospitals are, of course, as well treated as they can be; but that is only a part of what ought to be done. The great object of the medical officer of health is to prevent the spread of infection from the dwelling whence the patient was removed; but if patients are received into these hospitals, and no information given to the medical officer of health, the individual patient may be well cared for, but a poisoned dwelling is allowed to remain a poisoned dwelling for the extension of the disease.

I am not going to find fault with the administration of our hospitals—they are noble institutions,—but I may be permitted to ask, Is not the admission into general hospitals of patients suffering from infectious disease, without due information being given to the local authorities, retrogressive to our sanitary efforts for arresting the spread of disease? Have we not again and again at our meetings resolved that, in the opinion of this Society, it should be a legal obligation on the person in charge of houses &c. to report to the sanitary authority without delay the existence of a case of infectious disease? Also, is it advisable to admit infected patients into general hospitals, notwithstanding the advantages for clinical study, considering that special hospitals, under the able management of the Metropolitan Asylum District Board, are provided for their reception and treatment?

In reverting to the first group of cases, there can be no doubt that the fever originated in St. Giles's district, either in Lincoln-court or Orange-court, both of which are in the area being dealt with by the Metropolitan Board of Works, under the Artisans' Dwellings Act, 1875. Both these courts have long been known to be unhealthy, and in every outbreak of typhus fever that has occurred in the district the source has always been traced to them. Much has been done by the district sanitary authorities from time to time to ameliorate their bad condition, under the Nuisances Removal Acts, but the property structurally was such that nothing but total demolition could successfully deal with it. Even the Works Committee of the Metropolitan Board, after their inspection in 1876, reported "that this area comprised some of the most wretched houses in the metropolis, in which the inhabitants are densely populated."

In evidence of its insanitary condition I was able to prove, at the inquiry before the Commissioner appointed by the Home Secretary, an actual death-rate of nearly 40 in the 1000 per annum in Lincoln-court.

This property, which was so bad in 1876, has since become worse, both owners and tenants, knowing it was being dealt with by the Metropolitan Board of Works, did as little as possible to the property. The process of natural decay advanced quickly, until at last it became in such condition that it was utterly impossible to make them fit for habitation. *Can it therefore be wondered at that typhus fever should find its home there?*

The houses in Lincoln-court have been recently pulled down by the Metropolitan Board of Works, those in Orange-court have been closed by order of the magistrate under the Nuisances Removal Acts on the application of the District Board, and proceedings are now being taken against the owners of adjacent property with the view of closing them also.

I have endeavoured to arrest the spread of the disease, but my powers under the Sanitary Acts are insufficient to do much.

The Metropolitan Board of Works seems to have done its best to deal with the area under the 1875 Act, but so many difficulties seem to have arisen in the carrying out of the provisions of that Act, that this—one of the first and worst cases reported to them—has been in their hands since January, 1876, and is still incompleted.

Of the ultimate benefits that will be derived from the Act there can be no question, but the length of time which seems necessary to improve any area under it, demands, in my opinion, some amendments to expedite its progress.

NOTES ON

THREE CONSECUTIVE SUCCESSFUL CASES OF OVARIOTOMY.

BY WM. OSBORNE LAMBERT, M.D., L.R.C.P. LOND.,
GOVERNMENT CONSULTING MEDICAL OFFICER, AND INSPECTOR OF MERCANTILE MARINE, FOR PORTS IN THE NORTH OF ENGLAND.

THE following notes of cases have been read at the Newcastle-on-Tyne Infirmary, before the Northumberland and Durham Medical Society.

CASE 1. *Polycystic ovarian cystoma; operation; recovery.*—Mrs. T——, aged thirty-three, mother of three children, consulted me in October, 1874. She said that three weeks after the birth of her second child she noticed she appeared to be scarcely any smaller than before confinement, and thought "something must be wrong." I diagnosed a polycystic ovarian tumour, but did not advise anything to be done until her size caused more inconvenience. In course of time she was confined of another child, and although the tumour had attained a considerable size, labour was in no way interfered with. The tumour now began to enlarge rapidly, and I proposed tapping, but she would not submit to it till Oct. 15th, 1875, when she had become so large that for three days and nights she had been unable to lie down "for fear of strangling or choking." I proceeded to tap with a medium-sized trocar, but the fluid which flowed was so small in quantity and thick that I concluded the instrument had only entered one of the smaller cysts. I therefore made a fresh puncture higher up, this time getting into the main cyst, from which flowed thirty-two pints of a muddy-coloured fluid.

Three weeks after the cyst had nearly refilled, and I proposed, and she consented to, an operation, which was performed on Nov. 12th, 1875. The urine being drawn off, and chloroform administered by Dr. Gammage, I made a small incision in the linea alba, which was afterwards enlarged. The distended peritoneum then came into view; it was hooked up by the forceps and nicked, and then divided the whole extent of the external incision on a director. The cyst was punctured with a large trocar, and emptied of about thirty-three pints of fluid. There were no adhesions, and the tumour was dragged through the wound. Wells's elliptical clamp was then applied to the pedicle, which was of fair length, and divided. No blood escaped into the abdomen, and cystic fluid was removed by sponges previously cleansed in carbolic solution. The uterus and remaining ovary were examined and found healthy. A strong suture of carbolised catgut was applied at the lower part of the wound in the abdomen, and the pedicle, held firmly outside, was pressed against this suture, and a second placed directly over it. The remaining portion of the wound was treated in the usual manner. Vomiting often occurred during the operation, which was rather embarrassing. The cut surface of the pedicle was covered with small fragments of solid perchloride of iron. The operation being finished, the wound and pedicle were covered with lint soaked in carbolised glycerine, which was again covered with oiled silk and cotton wool, the whole secured with long and broad strips of plaster, and finally an abdominal belt.

During the first three days her condition was as well as could be expected, but on the fifth day, on proceeding to dress the pedicle, it was found to be detached, and there was an ichorous discharge from the stump and wound, the lower part of which was not closed. There was frequent vomiting, a quick and feeble pulse, high temperature, abdominal distension, and pain; indeed, septic peritonitis had supervened. For several days her condition was critical, but gradually a change for the better took place, and ultimately she made a good recovery, and at the present time is strong and healthy.

CASE 2. *Monocystic tumour; operation, complicated with Cæsarean section of the uterus, followed by recovery.*—This case is of remarkable interest, as showing the *vis medicatrix naturæ* after extensive use of the knife. A lesson, too, on the importance in every case, before performing ovariotomy in an unmarried as well as in a married woman, of making sure of the coexistence, or the contrary, of pregnancy, the diagnosis of which in the early months of gestation is rendered doubly difficult by the presence of ovarian or other disease of the pelvic viscera. In this case, I have to make the confession, it was overlooked. Fortunately, the mistake made was not a fatal one; and I have the less hesitation in recording it since I find so eminent a surgeon as Spencer Wells made precisely the same error in puncturing a gravid uterus, thinking it was another enlarged ovary. Nor is proof wanting of numerous instances of mistaken diagnosis, where the abdomen has been opened and no tumour found, by surgeons whose names have added lustre to our science.

Mary P——, aged nineteen, unmarried, and said to be "quite regular." I had tapped twelve months before performing the operation, drawing off twenty-five pints of characteristic cystic fluid. At the end of that time she had become very large again, and I operated upon her for the removal of the tumour on Jan. 15th, 1876. Chloroform being so apt to produce vomiting (a serious drawback in these cases), recourse was had to nitrous-oxide gas and ether, administered by Mr. Cafferata and Dr. Gammage, and there was no vomiting during the operation, although it occupied forty minutes. A small incision was made in the linea alba, the peritoneum hooked up and nicked, and the wound enlarged on a director. I then proceeded, rather too hastily, to puncture what I took to be the cyst. Very little fluid issuing from the trocar, I withdrew it to ascertain the cause, when terrific hæmorrhage occurred. I then introduced my finger into the opening made by the trocar, when, to my confusion and horror, I came upon placental structure and the extremities of a small fœtus. Such being the state of things, I considered it would be the best proceeding to empty the uterus of its contents, according to the rules of the Cæsarean operation. I therefore enlarged the opening with the knife, and removed placenta, fœtus, and membranes. This being done, I ascertained the os uteri to be open by passing a catheter through it. Hæmorrhage was controlled by pressure on the abdominal aorta, but there being no contraction of the uterus, I applied one pole of an electro-magnetic machine to the lumbo-sacral region and another to the uterus, when contraction immediately took place. (I had the machine at hand in case of accident with the anæsthetic.) The Cæsarean section was then kept in apposition, and secured with three carbolised catgut ligatures, and all was so far right. The tumour, which had been pressed up against the liver and diaphragm by the uterus, then came into view, and was tapped of seventeen pints of fluid; the pedicle was next tied, divided by the cautery, and dropped into the cavity; the wound was closed in the usual manner, and covered with lint soaked in carbolised glycerine, oiled silk, cotton-wool, and flannel-roller. (I would here acknowledge the valuable assistance I received from my friend, Dr. John Stevenson, now of Chuttondean Barracks, Chatham.

The patient made a rapid recovery, without one bad sym-

ptom, and was out in three weeks. At the present time she is living and well.

CASE 3. *An enormous compound or proliferous tumour; operation; recovery.* — This case is, owing to its history, almost of more interest than the preceding one. Mrs. W——, aged fifty, the mother of eleven children, of highly nervous temperament, nine years ago was confined of her youngest child (although she has had four miscarriages since). On getting up she noticed her size to be no less, and, continuing to get larger, in April, 1869, she went to Edinburgh, and consulted Professor Simpson, who told her she was suffering from a tumour. He advised an operation, but she declined. In the following August the bulk of the tumour had become so great that she was unable to walk, and her breathing so difficult that she had to be propped up in bed. She was thought to be in a dying state, when suddenly rupture of the cyst took place. This was followed by syncope, or collapse, but by stimulants and warmth reaction was brought about in twelve hours. Her whole body then began to swell, and she presented the appearance of a person suffering from traumatic emphysema. Even her eyelids became closed by œdema. She then began to micturate cystic fluid by the bladder every ten minutes, and at the end of the fourth day she had passed sixty-five pints of fluid. Her body had diminished to the natural size, and apparently the tumour was gone. From 1870 to the early part of 1877 rupture and refilling of the cyst had occurred no less than thirty-four times, and always followed by the same symptoms. Her sufferings, latterly, before rupture, had become so great that she submitted to tapping, which I performed four times before she was operated upon. On the first occasion I drew off eight gallons and a half of fluid, on the second seven gallons, on the third eight gallons. On the fourth, owing to a leak in the tub into which the fluid ran, I was unable to estimate the quantity of fluid accurately, but I believe it would be over eight gallons. This history of rupture, absorption of the fluid by the peritoneum, and refilling so many times, makes the case a very remarkable one; for, as a rule, if a large cyst ruptures, it is followed by fatal collapse, or, if this is recovered from, the patient often succumbs to peritonitis. It is remarkable, too, for the amount of fluid which this cystoma must have secreted, for, as near as I can estimate from first to last, it must have secreted at least 273 gallons—a quantity larger than in the case of Dame Mary Page, recorded in Sir Thomas Watson's "Practice of Physic." Fourteen days after the last tapping the cyst had filled again, and pyæmic fever had set in, with a pulse of 120 and a temperature of 103·6°. Under these circumstances I considered an immediate recourse to the knife afforded the only chance of life, and that a poor one.

Ovariotomy was performed at 10 o'clock A.M. on Oct. 1st, 1878. Professor Lister's precautions were taken against septic infection. I had ordered a steam-spray producer, but that not coming in time I extemporised an antiseptic atmosphere of ozone gas, generated from a mixture of peroxide of manganese, oxalic acid, and permanganate of potash placed on plates about the room. Directly water is added, volumes of it are given off. This gas makes short work of "bacteria," disease germs, and malaria. In using, it is necessary to cover up articles of steel or brass which may be in the apartment, as it rusts all metals meaner than gold or silver. Chloroform and ether being administered by Dr. Gammage, a short incision was made in the linea alba, which was afterwards enlarged, the peritoneum was hooked up, and a small opening made in it and enlarged to the size of the external opening on a director.

I expected to encounter extensive adhesions, as there had been frequent manifestations of inflammation; and adhesions there were nearly all round the tumour, in front to the parietes, and behind to the viscera and left ureter, but they were easily and quickly broken down by the hand, and I found removal of the cyst practicable. Several bleeding vessels had to be tied. I did not use the trocar, but made a large opening into the cyst with the knife, so that it might be more expeditiously emptied of its contents. The tumour was dragged through the opening, and the pedicle, which was very thick and short, transfixed with carbolised catgut at right angles, and then tied round. The tumour was cut away; the stump cauterised and dropped into the abdomen. The opposite ovary examined and found healthy. No fluid having escaped into the cavity, sponges were placed between the edges of the wound until the carbolised catgut sutures, six in number, were ready to be drawn together. The wound being closed, was covered with lint soaked in carbolised glycerine; this again covered with oiled silk and cotton wool, the whole secured with a broad belt round the abdomen. The time occupied in the operation was twenty-five minutes.

Six hours after the operation the temperature had fallen to 100°, and the pulse to 110. She had only vomited once. Had sucked four ounces of frozen milk, and taken a quarter of a pint of beef-tea. Urine drawn off.

Oct. 2nd.—Temperature 100°; pulse 110. Tongue clean and moist. Has vomited once since yesterday. Taking more frozen milk and beef-tea. No medicine or stimulants have been given up to present time. Urine drawn off.

3rd.—Vomited twice during last night, but easily. Had four hours' sleep. Temperature 99°; pulse 100. Appearance cheerful. Has taken about eight ounces of frozen milk, and same quantity of beef-tea, also some tea. Urine drawn off.

4th.—Has slept well during last night. Wound examined under ozone atmosphere. Primary adhesion along whole line of incision; no tympanites. Pulse 99; temperature 98·6°. But little thirst, and no vomiting. Tongue clean and moist. Has had a pint of milk and a pint of beef-tea. Catheter used. From this time all went well with her, and she is now a fine strong woman.

On examining tumour after its removal I found extensive acute suppuration, thus confirming the opinion before the operation that it had taken on inflammation; and had she not been operated upon, I have no doubt death would have resulted in a few days, either from exhaustion, rupture, or peritonitis. At different parts of internal periphery of cyst were found countless thousands of glandular neoplasms, undergoing cystic, colloid, and almost every other form of degeneration.

In the process of drying the tumour for its preservation, it has shrunk to about half its original bulk, but some idea may be formed of its size from the fact that it now measures in its longitudinal circumference 3 ft. 2 in., and in its transverse circumference 2 ft. 8 in.

Sunderland.

FARADISATION IN CASES OF CHRONIC ALCOHOLISM.

BY W. J. H. LUSH, M.D., F.R.C.P., F.L.S.

DR. F. P. ATKINSON, in a paper published in a recent number of the *Practitioner*, considers that alcoholism may be divided into three stages—namely, (1) sleeplessness, accompanied by a hard quick pulse, loss of appetite in the morning, and morning sickness; (2) drowsiness, accompanied by a slow somewhat compressible pulse, complete loss of appetite, and constant sickness; (3) delirium, accompanied by complete loss of sleep, and the presence of horrible apparitions, especially at night. The pulse is small, quick, easily excitable, and compressible. The blood is deficient in red blood-corpuscles. Hydrocarbons are present in poisonous quantities, the brain undergoes little or no repair. The vaso-motor nerve influence is almost entirely lost.

For all practical purposes this may be considered as a very useful division, and my object in making these few remarks is to bring before the notice of the profession a remedial agent which I have found of the utmost value in the treatment of chronic alcoholism—I mean the application of electricity. For some time past I have had many opportunities of testing its efficacy, both in cases met with in the ordinary course of private practice, and also on patients placed specially under my charge, and over whom I consequently had more complete control; and in suitable cases I am confident that it is an agent of very great value.

The cases in which I have found it most useful are those which may be classed under the second heading, in which drowsiness, a shattered nervous system, constant vomiting, and a great want of bodily and mental power are the marked symptoms. The use of galvanism was of course combined with other hygienic and medicinal remedial measures, and although a great deal has been written on the subject of alcoholism generally, still I feel I need make no excuse for occupying a little space in THE LANCET on a matter of such vital importance. I hope shortly to publish particulars of several cases which have derived marked and permanent

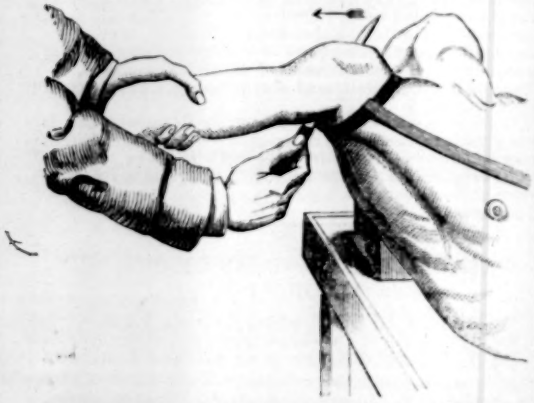
benefit from the use of galvanism, and in the meantime I should be glad if any of my readers who have tried this method of treatment, or who have had opportunities of forming an opinion as to its results, would place their experience on record or communicate to me personally. I have been in the habit of using a moderately strong constant current battery, and in applying the current I have not paid particular attention to Ziemssen's points, although in future cases I am inclined to think it would be better to do so.

Fyfield, Hants.

A NEW METHOD FOR ARRESTING HÆMORRHAGE WHEN AMPUTATING AT THE SHOULDER-JOINT.

BY EDWIN MOORE, M.D.

IN cases of amputation at the shoulder-joint that have come under my observation, I have noticed the chief difficulty of the operation to consist in controlling the hæmorrhage attending it, necessitating the aid of a quick and competent assistant. I have twice, in performing this operation, adopted a method which renders it almost a bloodless one.



I lay a piece of calico bandage across the chest and upper part of the shoulder, and then fix an india-rubber cord or tourniquet round the shoulder over the bandage; this effectually compresses the axillary artery. In order to prevent the india-rubber cord from slipping, an assistant takes both ends of the bandage and holds them across the chest.

If called upon to repeat the operation, I would pass a calico bandage under the india-rubber cord, *behind* as well as in front of the shoulder, then tie the four ends together, and thus dispense with the help of an assistant.

The accompanying sketch will, perhaps, help more clearly to explain my meaning.

Preston.

BEQUESTS ETC. TO MEDICAL CHARITIES.—The Queen's Hospital, Birmingham, has received £200 under the will of Mrs. Prudence Bissell. The Halifax Infirmary has received £200 under the will of Mr. T. S. Walsh. The Duke of Marlborough has given £100 to the Radcliffe Infirmary, Oxford, being the proceeds of fees for viewing Blenheim House. The late J. Hebdin, of Lee Park, bequeathed £200, and Thomas Knight, of Lewisham High Road, £90, to the Royal Kent Dispensary. The Norfolk and Norwich Hospital has received £5000 under the will of Mr. John Hopper. Mr. James Fellowes, of Old Quebec-street, bequeathed £100 each to the Charing-cross Hospital, the Royal Westminster Ophthalmic Hospital, the West Kent General Hospital, and the Kent County Ophthalmic Hospital. Mr. Robert Henry Allan, of Blackwell Hall, bequeathed £5000 to the Darlington Hospital. Mrs. Susanna Cater, of Norwich, bequeathed £319 19*s.* to the Jenny Lind Infirmary for Sick Children at Norwich, £300 to the Norwich Dispensary, and £200 to the Norfolk and Norwich Hospital.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. BARTHOLOMEW'S HOSPITAL.

THREE CASES OF CHRONIC MENINGITIS, FOLLOWING INJURY TO THE SKULL.

(Under the care of Dr. SOUTHEY.)

SEVERE localised headache, delusions, mental aberration, signs of paralysis, epileptic fits, and other symptoms as sequelæ of injuries of the skull, are more familiar to surgeons than to physicians. During the present year we have published in the "Mirror" many cases of fracture or other injury to the skull followed immediately, or after a longer or shorter interval, by symptoms of cerebral lesions or mental impairment. We may indicate some of the cases included in the instructive series taken from Mr. Hulke's clinique at the Middlesex Hospital, and distributed over many weekly issues (vol. i., pp. 50, 119, 155, and 663; vol. ii., pp. 689 and 761); two cases reported from Mr. Jonathan Hutchinson's wards in the London Hospital (vol. i., p. 664); and the extremely interesting cases that were under Mr. Davies-Colley's care in the Seamen's Hospital, Greenwich (vol. i., p. 733).

The following cases will, in addition to their own intrinsic merits, give increased importance to those just referred to. They show that chronic meningitis may follow blows on the head at a period so remote that the connexion between the two may be entirely overlooked or misinterpreted. As Dr. Southey pointed out in some comments on these cases, the difficulty of tracing any connexion between the injury and the symptoms of meningitis is usually increased by the circumstance that when the patients come under observation they are often unable to give any trustworthy account of themselves. The symptoms may point distinctly towards chronic meningitis, but the initial lesion is not made known. The presence of tuberculosis is too often accepted as an ever-ready explanation of the phenomena; whereas these cases of late traumatic meningitis are wholly unlike, in course, duration, and morbid anatomy, tubercular meningitis, though simulating it in their clinical characters.

CASE 1. *Chronic cerebral and spinal meningitis occurring four years after a fall from a window; death.*—Mary Ann S——, aged twenty-seven, a pale but fairly-nourished woman, was admitted Nov. 5th, 1878, with vomiting and diarrhœa. Her appearance was not prepossessing, in consequence of a deep indentation of the bridge of the nose, the result of an old fracture. The mental state was peculiar. She could give no account of her illness; but she possessed all the special senses, as well as power of motion and of sensation, and a little, though degraded, intellectual power. Though listless, morose, and indifferent to questions directly addressed to her, she every now and then threw a remark into her mother's statement respecting her ailment, confirming, correcting, or repudiating it indiscriminately. Her memory was obviously defective, but there was an apparent desire not to mislead or to have her history misstated.

The remains of the old fracture of the nose suggested an inquiry into the circumstances of the accident. It was alleged that four years previously the patient fell out of a window (the height was not ascertained), and was picked up unconscious and bleeding from the nose. Consciousness soon returned, and beyond the depression of the bridge of the nose, she was not thought to have suffered any particular damage. She set about her usual domestic duties at once, and made no further complaint. About two years after this she married, and was confined of a healthy child about eighteen months afterwards. She was suckling the child, aged six months, at the time of admission, and had a moderate amount of milk in both breasts. After her confinement she remained low-spirited and ailing, and five weeks before admission her husband and relations noticed

her conduct to be strange; she talked a good deal of nonsense, they said, occasionally wandered about the house at night, and was unable to give any good reason for her vagaries. About a fortnight before admission her hands became red, swollen, and painful, so that she could hardly move her fingers. This was attributed to rheumatism. She gradually became more delirious and difficult to restrain or keep in bed, and three days before entering the hospital vomiting supervened. She was stated to have been healthy, of temperate habits, industrious, and happy in her home.

When taken into the hospital she walked upstairs slowly and stiffly, and required little help to undress herself. She seemed stiff and weak, and moved her head stiffly, and she complained of pain down the spine, especially at the cervical portion. There was, however, no tenderness on pressure over any of the spinous processes. The pupils were equally dilated, and reacted slowly to light. The physical signs of heart, lungs, and abdominal viscera were normal. The tongue was thickly furred and indented at the edges. The bowels were confined. Temperature 99·4°; pulse feeble, 92; respiration 23, tranquil and regular. At first she refused to take some beef-tea, saying she should only bring it up again. After a little pressing she did take some, and at once ejected it. Urine: thirty to forty ounces passed daily, acid; sp. gr. 1030; yielding a deposit of urates, and containing a trace of albumen, but no sugar.

The diagnosis was chronic cerebral and spinal meningitis, but whether of tubercular nature or not was left undecided.

She was fed frequently with small quantities of milk and beef-tea, and had nutrient enemata whenever the stomach rejected food. She was quieted with draughts of chloral hydrate and bromide of potassium combined; occasionally she needed hypodermics of morphia. She had alternations of excitement and depression. On some nights her cheeks would be flushed, and she was noisy and troublesome and called out violently; and then would follow fits of extreme depression, in which she was completely indifferent to what was done for her, perverse, wilful, and apparently conscious of the trouble she was giving, but choosing to pass her urine and fæces in bed. At the professional visits she could rouse herself and answer questions rationally, though not always correctly; afterwards she would ramble and mutter incoherently. On one occasion she cried when asked about her baby; on another she denied ever having had one.

On Nov. 9th and 10th the temperature rose to 101° and 101·8°, and on the 11th it ranged between 98·4° and 101·8°. It never reached 102°.

Rarely she enjoyed her food, and went twenty-four hours without vomiting. By ophthalmoscopic examination, the left optic papilla was found to be redder than natural, and the veins were rather swollen, but there was no effusion.

Towards the end of November the periods of mental excitement became fewer, and she remained perfectly passive, absolutely demented. On the 28th she was violently convulsed; the fit lasted half an hour, and was succeeded by rigidity of the legs, which did not pass off for some hours. During the seizure the pupils widely dilated. A comatose sleep followed, and on awaking she was more rational, and for several days after there was less vomiting. Urine, sp. gr. 1032, with traces of bile and albumen, but no sugar.

On Dec. 2nd she lay huddled up in bed like an ordinary case of dementia, quite quiet, and appearing to suffer pain in the neck when moved. Pupils dilated, face flushed; pulse very feeble, regular; temperature normal. The right optic papilla was hyperæmic; the left was ill-defined at the margin, and the adjacent retina was hazy. There was also some disturbance of the choroidal pigment.

On Dec. 8th, at 3 P.M., she had a severe rigor, during which the axillary temperature was 98·5°; pulse 136. No reactionary fever followed. She daily grew feebler, but did not exhibit any signs of paralysis, and could turn herself in bed up to the last. She died quite suddenly on Dec. 16th.

Necropsy (Dec. 17th). — Thoracic and abdominal viscera all healthy, except the liver, which was slightly fatty, and the gall-bladder contained four gall-stones. Head: The skull-cap was somewhat adherent to the dura mater about the Pacchionian glands and in one or two other places. The pia mater over the base of the brain was thickened and opaque, and the veins were swollen. The convolutions of the hemispheres were flattened. The pia mater lining each side of the Sylvian fissure on both sides was adherent, as were also the adjoining surfaces of the two cerebral hemispheres, preventing a proper view of the corpus callosum, without forcible separation. The lateral ventricles, the third ventricle, and the aqueduct of Sylvius were all widely dilated, and contained a slightly turbid serous fluid. The choroid plexuses were collapsed. The lining membranes of the ventricles were opaque, the opacity extending down into the fourth ventricle, and thence to the space between the peduncles of the cerebrum. At this spot, a dense opaque membrane, continuous with the pia mater, abruptly closed the passage, so that the intra-ventricular fluid was cut off from its normal communication with the spinal arachnoid channel. Thus a false membrane, the product of chronic meningeal inflammation, extended from the posterior part of the median lobe of the cerebellum to the posterior pyramids of the medulla oblongata, and blocked the natural passage by which the cerebral and spinal subarachnoid fluids intercommunicate. As a result of this, the ventricles of the brain were dropsically distended, and the convolutions flattened from compression. No tubercle or appearances at all resembling it were discoverable on the pia mater or on the walls of the smaller arteries.

The brain is preserved in the hospital museum.

The question is, Did the chronic meningitis depend upon and originate from the injury received at the fall four years before?

The other cases will be published next week.

RADCLIFFE INFIRMARY, OXFORD.

FATAL CASES OF GASTRIC ULCER, SIMULATING, IN THEIR LATER STAGES, SCIRRHUS OF THE PYLORUS; REMARKS.

(Under the care of Dr. TUCKWELL.)

THERE are certain ulcers of the stomach which, from their situation at, or just within, the pyloric orifice, cause contraction, and imitate very closely in their later stages the symptoms of scirrhus of the pylorus. So near, indeed, is this resemblance, that, even after death, unless a close inspection is made, the one may be mistaken for the other. Clinical observation of these cases, when seen only in the last few months of life, is apt to mislead, unless a strict account is taken of the earlier symptoms. After many months of the ordinary pain and vomiting which characterise ulcer, the pain gives place to a feeling of distension, and the vomiting comes on at longer intervals, till at last the dilated stomach may be seen and felt, just as in schirrus pylori, and large quantities of such food as has been taken are ejected, after pauses of twenty-four or forty-eight hours, either with or without yeasty scum and sarcinæ.

CASE 1.—Sarah N——, aged thirty-five, was admitted on August 25th, 1877. She had been before under Dr. Tuckwell's treatment, from January to March, in the same year, with symptoms of gastric ulcer, and had seemingly quite recovered. She had kept well during the month of April, but in May had had a return of all her former symptoms. She was now suffering from epigastric pain, increased by food, and vomiting of everything taken into the stomach. She was fed entirely by the rectum, with injections of beef-tea and milk; and gradually improved, so as to be able to take by the stomach and retain small quantities of fluid food, and there seemed every prospect of her recovering, as in her previous attack. The vomiting, however, returned in a few days, and in a different form from what had before been noticed. The food taken during the day now collected and gradually distended the stomach, and a large quantity was vomited every evening; the sickness being preceded by a feeling of distension rather than pain, and forcible contractions of the stomach. She became more and more emaciated, so as to present exactly the appearance of a person suffering from cancer, and died exhausted on Oct. 16th.

Necropsy.—The pyloric orifice was encircled by a hard ring of thick tissue, and so contracted that a probe could only just be pushed through. The peritoneum was continued smoothly over the part. There were no secondary deposits in the liver or neighbouring glands. On laying open the stomach, it was found dilated; its walls were thickened from hypertrophy of the muscular coat; its mucous membrane was somewhat thickened, but not otherwise altered, till the pylorus was reached, where it was completely destroyed in an irregular manner. In one half of the thickened ring there remained nothing but a smooth cicatrix, the mucous membrane having been clean destroyed

by previous ulceration, circular in form. The other half of the ring contained a second ulcer, separated from the first only by a faintly defined ridge of mucous membrane, and seemingly of more recent origin. It had also healed, except for a space as large as the finger-nail, where it was still open. The two ulcers thus completely encircled the pyloric orifice, and the thickening at the floor of the first ulcer was much more considerable than that at the floor of the second. The microscope showed nothing but cicatrix-tissue in the thickened parts; no evidence of cancer-structure.

Remarks.—The post-mortem appearances here exactly fit in with the clinical observations. The first ulcer was formed in January, and healed under treatment. The second ulcer formed in May, and, like the first, was steadily healing under treatment, but in the process of healing quite blocked up the pylorus by contraction of the cicatrix, and so indirectly destroyed life.

CASE 2.—James B——, aged forty-one, was admitted on July 2nd, 1879. He was reported to have been well and at work till eighteen months before admission, when he had begun to suffer from indigestion and flatulence. This had been followed by pain and vomiting after his meals. Lately he had been able to retain the food for a longer time, and instead of rejecting it soon after it was taken, he had kept it down for many hours, and then, after suffering great discomfort from distension, had vomited a large quantity at once, with immediate relief. Six weeks before admission he had vomited a large quantity of black blood, and passed much altered blood by stool.

On admission he was very emaciated and sallow. There was tenderness on deep pressure in the epigastrium; he had vomited on the previous evening a large potful of dark-brown fluid with a yeasty scum, which contained both torulæ and sarcinæ. He was fed by the rectum with injections of beef-tea and milk, and for a time seemed to improve, but after ten days of this treatment the injections could not be retained, the vomiting returned, and he continued to eject, at intervals of twenty-four or forty-eight hours, large quantities of fluid vomit, sometimes with, sometimes without altered blood. He got thinner and thinner, and had the sallow, cachectic look of cancer, so that a diagnosis between cancer and contracting ulcer was difficult. He died on July 30th.

Necropsy.—The stomach was much dilated; its walls in the pyloric half were thickened from hypertrophy of the muscular coat; it contained a large quantity of the same fluid which had been vomited during life; its mucous membrane was somewhat thickened. Close to the pyloric orifice was an ulcer, two inches and a half in length by one and a half in breadth, oval in shape, in the direction of the long axis, and on the posterior wall, of the stomach. One end of this ulcer extended into the pyloric orifice, and had given rise to great thickening and contraction of the pylorus. Part of it was in contact with and firmly adherent to the pancreas, and had healed, but part was still unhealed, and showed at one spot the gaping mouth of an artery of some size, which had been laid bare and opened by the process of ulceration.

COUNTY LOUTH INFIRMARY, IRELAND.

STRANGULATED SCROTAL HERNIA; RUPTURE OF THE SAC AND HÆMATOCELE; DEATH.

(Under the care of Dr. HERCULES MACDONNELL.)

PATRICK M——, aged forty-five, an active, strongly-built man, was admitted on the 22nd of August, 1879. Five years previously he noticed a swelling in his left inguinal region, which was recognised as a hernia, and for which he subsequently wore a truss. On the evening of the 20th, when jumping from a cart, he felt a snap, and immediately experienced great pain; the scrotum grew large, and the pain increased. He was seen by Dr. Blake, of Ravensdale, the following day. An effort was made to reduce the rupture, but it proved unsuccessful.

On his admission the following morning his face wore an anxious expression. On examining the scrotum a tense, bluish, semi-fluctuating mass was seen, measuring in the lateral circumference twenty-five inches, and from the perineum to the root of the penis twenty-two inches. The penis was œdematous, measuring five inches in circumference. The bowels had not been moved for three days. There was no retention of urine. A distinct enlargement could be felt in the left inguinal region. He was given a large soap-and-water enema and a hot bath. An incision was made into the extremity of the scrotum, and twenty-one ounces of a dark fluid evacuated. This gave instant relief. The cavity was washed out with a warm, weak solution of carbolic lotion; a linseed-meal poultice, spread on tenax, was applied, with oil-silk outside. One-grain doses of opium every sixth hour were ordered, and milk and lime-water in small quantities allowed. At 8 P.M. the temperature was 99·8°, and a fair share of urine had been passed since admission.

He had no sleep that night, and had next morning some pain referred to the umbilicus. No motion from bowels; temperature 99·6°; vomited some greenish matter during the night. The œdema of penis had disappeared, as well as the redness on right side of scrotum, but the left was very much enlarged. Some blackish matter came away on the poultice. Hernial neck now well defined; slight gurgling heard on manipulation. During the day no flatus or fæces passed; the vomiting was frequent and large in quantity, but not stercoraceous. In the afternoon he was given a long bath at 100° F. Half a grain of morphia was injected subcutaneously, and the operation for the division of the stricture was commenced, ether spray being used. No difficulty was experienced in reaching the sac, which was found very much thickened. On opening this the intestine was found to be bluish and congested, but not gangrenous. The stricture was relieved, but considerable and unaccountable difficulty was found in returning the intestine, of which there were three large loops down. The patient was removed to a warmed bed, some slight stimulant given, and warm jars applied to the feet. Antiseptic dressings were applied. At 11 o'clock the patient complained of feeling sick. Some flatus escaped, and during the act of vomiting he fell back in the bed, dead. He was quite cheerful a few moments before, and complained of no pain.

Necropsy, twelve hours afterwards.—Rigor mortis well marked. Penis and scrotum discoloured, also left iliac region. On removing the silver sutures and prolonging the incision downwards, laying open the scrotum from apex to base, about a teaspoonful of dark-coloured fluid escaped. The sac of the hernia was adherent to the tissues for a great part of its extent. The testicle was smaller and softer than normal. At the lower and back part of the sac, where it began to be reflected forwards, was a rent, extending for about an inch in a horizontal direction, of a lacerated description; this was sufficient to account for the hæmatocele, and also for the difficulty experienced in returning the hernia when the structure had been fully divided, a knuckle of intestine having passed through this rent in the sac. The filling up of the scrotum took place very quickly, and immediately on receipt of the injury.

The presence of a hæmatocele with scrotal hernia is sufficiently rare to merit notice; but the cause—viz., rupture of the sac from a violent jump—is in itself such a rare injury that a case verified by post-mortem examination is worthy of being recorded.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Trephining for Traumatic Epilepsy.

THE ordinary meeting of this Society was held on the 25th inst., Mr. J. E. Erichsen, F.R.S., President, in the chair. Only one paper was read—viz., one by Mr. James West, of Birmingham, on a case of traumatic epilepsy, for which trephining was successfully practised, the author discussing at length the operation in this connexion. The paper gave rise to a prolonged and instructive debate.

Mr. JAMES F. WEST brought forward a case in which Trephining had been successfully employed by him for Traumatic Epilepsy in a girl aged fourteen. The injury was due to a blow from a stone, which caused fracture of the skull and concussion of the brain. Since 1871, when it was inflicted, the girl had been subject to epileptic fits, which had year by year increased in number and severity, until they had at last reduced her to an almost idiotic state.

Two circles of bone over the site of the depressed fracture (which was, however, found to involve only the outer table) were removed on Nov. 25th, 1878, with antiseptic precautions. From that date the girl began to improve; speech returned, also the power of controlling the bladder and rectum. Antiseptic treatment was discontinued on Dec. 3rd, and at the end of the month she left the Queen's Hospital cured, and from that time to the present she has had no return of the epileptic convulsions. Mr. West gave a brief *résumé* of the surgical writings on the operation of trephining for epilepsy, calling special attention to the work of Dr. Lucas Championnière on the subject—"La Trépannation guidée par les Localisations Cérébrales" (Paris, 1878),—and to the valuable paper by Dr. Echeverria on "Trephining for Epilepsy depending upon Injuries of the Skull," in the *Archives de Médecine* for December, 1878. Mr. West considered that the trephine might be applied with advantage in many cases where epilepsy was dependent on a traumatic origin; that there were, owing to recent discoveries in physiology, valuable indications to be derived as to the exact nature of the lesion and the site at which the operation should be performed; and, lastly, that with antiseptic precautions trephining might at the present day be performed with a greater prospect of success than formerly, and might therefore be looked upon as a justifiable operation.—Dr. ALTHAUS said the case was of interest physiologically, although he doubted whether the practice would often require to be followed, so rare are cases in which epilepsy can be traced to injury. From fourteen years' experience at a hospital devoted to epilepsy, out of 3000 cases, he had not seen one presenting injury of cranial bones with depression, and in cases where a history of a previous injury suggested recourse to trephining, he had found relief and cure follow the administration of large doses of iodide of potassium. He regarded the broad question of cerebral localisation as now settled, although modifications might, with increasing knowledge, have to be made in details. It was singular that in this case an injury on the right side of the skull should have given rise to aphasia; but still, cases of aphasia are recorded in which the third left frontal gyrus was not affected, such being explicable on the view of the bilateral function of the brain. He doubted if the theory of localisation would prove a safe guide in determining the seat of operation, for in this case, on that view, the left parietal region should have been trephined and not the seat of injury to the skull. As to trephining, he mentioned that M. Gosselin was greatly opposed to it, having had most unfavourable results from septicæmia. M. Lucas-Championnière's dicta seemed to be based rather upon an enthusiasm for physiological results than upon practical experience.—Mr. BELLAMY referred to a patient now under the care of Dr. Lees at Charing-cross Hospital, where he had trephined over the fissure of Rolando. The case was one of epilepsy due to injury thirteen years before, and the fits were very frequent. With Dr. Ferrier's assistance, they determined the site of the fissure of Rolando (which happened to be just at the seat of injury), and the result of the operation was very satisfactory, the fits ceasing; but recovery was complicated by the formation of an abscess. Dr. Lees intended to read the case before the Clinical Society.—Mr. ADAMS thought the good result in Mr. West's case difficult of explanation, seeing that there was no depression of the inner table, as happened to the often-quoted case of the elder Cline. When Mr. Adams was dresser to Mr. Green at St. Thomas's Hospital, he saw that surgeon's case which had been referred to in the paper. The patient was a girl about ten years old, who, at the age of four, had received some injury to the head. She was admitted for fits of a cataleptic kind, and a depression on the parietal bone being found, Mr. Green trephined over the spot. Unfortunately, a large laceration of the dura mater was found; hernia cerebri took place, and the patient died. A few years ago Mr. Adams had under his care at the Great Northern Hospital a man suffering from repeated fits following a depressed fracture of the skull. Wishing to trephine, but not agreeing as to the site of the operation, Mr. Adams put the man on large doses of antimony (quarter of a grain every three hours), according to the rule laid down by Stromeyer, and the patient recovered.—Mr. HUTCHINSON said they must be much obliged to Mr. West for his case, and for the evidence he had collected. The occurrence of aphasia and right hemiplegia need not be set down to the direct effect of the injury in the right temple; it was extremely probable that at the same time the patient sustained a lesion of the brain by contre-coup on the opposite side, and the epilepsy should be considered apart from the rest of her symptoms. Mr. West's case conveyed the important lesson about the seat of trephining that localisation should not be too much depended on, but that the old rule should be followed—viz., to trephine over the seat of injury to the skull. He agreed with Dr. Althaus that such cases as these were not at all common. No conclusions could be drawn from rough statistics of trephining, including cases which are desperate from the first, and would die whether trephined or not. No useful purpose could be served from the comparison of these with other cases in which recovery ensued, the injuries being far less grave. There was no single operation in surgery that had been so much discredited as this from the conclusions based on such rough statistics; and if trephining is to come into vogue again it will be when surgeons abstain from resort to it in cases obviously hopeless, and reserve it for cases where there is no evidence of irreparable brain injury. Mr. Hutchinson concluded by advocating the operation in cases of compound depressed fracture in anticipation of the occurrence of cerebral inflammation and before the onset of symptoms denoting it. He had often followed this practice, and with exceedingly favourable results.—Mr. GAY referred to a case where mental disturbance followed on an injury to the skull. The patient was a man who was brought into hospital after an attempt to drown himself, and whilst in the hospital he succeeded in committing suicide by cutting his throat. Five years before he had received an injury to the skull in the right parietal region, followed by some necrosis, but ever after he became more despondent and suicidally inclined. At the autopsy the outer table was wanting beneath the cicatrix in the scalp, and the inner table was found to be driven in and adherent to the dura mater, a portion of which passed out through a fissure to unite with the scar-tissue outside. Beyond local thickening of the membrane and a depression in the brain at this spot, the brain was perfectly natural. Had the man lived, probably trephining would have been attempted, but the case was one in which it was difficult to say what locality of the brain was injured. A curious point was that whenever pressure was made over the seat of injury he had mental hallucinations, and always of the same kind. It was no doubt the surgeon's duty to trephine in cases of traumatic epilepsy, but he argued that the primary operation was far more successful than the secondary, which was often very dangerous.—Mr. HOLMES referred to a case which did not bear out what had been said as to the harmlessness of trephining in these cases. Many years ago he saw a case under Mr. Johnson, in which trephining was performed for the relief of epilepsy that had ensued upon an injury to the head received some time previously. The dura mater was lacerated, and the operation proved fatal from meningitis. Examination revealed the presence of chronic meningitis, also showing how hopeless would have been the chance of any relief from the operation; and the dura mater was torn, owing to its adhesion to the bones. Mr. West had referred to the great difficulty in diagnosing the condition of the skull and brain. In his case the dura mater was found to be healthy, and the bone not depressed. In another case the issue might not be so favourable, and, with all possible respect to antiseptics and modern surgery, he could not think trephining other than a most serious operation.—Mr. T. SMITH asked the author whether he thought the case was successful because trephining had been performed, or whether he attributed it to its having been done in that exact locality.—Mr. F. DURHAM, when surgical registrar at Guy's Hospital, had seen two cases of trephining for traumatic epilepsy. One case, under the care of Mr. Cooper Forster, was quite successful, all convulsions ceasing; no bad symptoms followed, and antiseptics were not employed. The other was a case under Mr. Howse, and the operation was performed strictly on antiseptic principles. The patient, a lad of nineteen, had no bad symptoms after the trephining, which, however, had not much effect in controlling the fits. The one case was a fracture; the other necrosis and exfoliation of bone.—Mr. BRYANT asked if less severe measures than trephining might not sometimes be of service. Two years ago he had under his care a man suffering from epileptic attacks and localised pain in the head, following an injury received five years before, which produced a scalp wound and partial concussion. The pain appeared a few months after the injury, and had never left him. Examination showed what appeared to be a depression of the skull beneath the scar. On incision

over this spot the bone appeared perfectly natural, no fissure or depression, so that Mr. Bryant did not resort to the trephine; but the pain and convulsions left the patient from that time, a result which could only be attributed to the incision down to the bone. He had had two other cases of almost similar kind, in both of which fracture was supposed to have taken place some years before, and in both perfect relief to symptoms was obtained by a free incision down to the bone. Such cases sufficed to raise the question whether it was right to proceed further than this in dealing with them, for he agreed with Mr. Holmes that trephining was a dangerous operation. There was always a risk in it of injuring the dura mater. Still he was disposed to agree with Mr. West that in certain cases of traumatic epilepsy trephining should be practised. One such case was brought to him by the late Dr. Dickson, and the fits were entirely relieved by the operation. In this case the bone and the dura mater were thickened. The patient died three years later from some intercurrent disease, and prior to his death there was a slight renewal of the fits.—Dr. DOUGLAS POWELL asked the author whether he attributed the epileptic attacks to direct lesion of the brain at the seat of injury, or as of reflex nature, the injured part exciting the convulsions, just as a carious molar tooth might. He had had under his care at the Middlesex Hospital a young epileptic lad, presenting an exostosis on the tibia, which had followed a wound produced by a kick in this region. The epilepsy had come on since the injury, the paroxysms being preceded by an aura starting from this part of the tibia. Sometimes the aura did not pass beyond the thigh, when no general convulsion followed. He asked Mr. Hulke to see the case, and he removed the piece of bone. At first the epilepsy was not materially affected, but, after a few weeks, the interval between the fits became longer, and it seemed possible that the mere removal of this "exciting cause" might result in cure. He therefore asked Mr. West whether, in trephining in his case, his object had been to remove a distal source of irritation, or to relieve the brain from direct pressure.—Mr. WEST in reply said that he would not pretend to argue from a single case, but the subject was one now attracting much attention, especially in France. Although the case might not lead surgeons to trephine in all cases of traumatic epilepsy, yet it was a justifiable measure in this instance, for the girl was advancing towards death; she was in a condition of idiocy, and had lost control over bladder and rectum. He certainly thought at the time that he would have found a fracture of the inner table irritating the dura mater, and was surprised to find nothing of the sort, although he removed a second circle of bone. The result, however, showed, whether *post hoc* or *propter hoc*, that in some way or other the operation relieved the symptoms. In a few days she could speak, became sensible, and now for a year after she has been quite free from fits. In reply to Dr. Althaus he thought that possibly more cases of epilepsy are due to injury than we are aware of. Children are most apt to receive injuries, disregarded at the time, but often leading to grave mischief subsequently. How many cases of spinal caries or hip disease can be actually *traced* to injury, yet who could doubt that traumatism was a most frequent source of them? So, many an epilepsy, showing itself first at the age of fifteen or twenty, might have for its starting-point an injury inflicted in childhood. The case had been treated medicinally by Dr. Heslop before coming under his (Mr. West's) care, but with no effect. He was not sure that much benefit could be hoped for from iodide of potassium in such cases. He had not cited all authorities, and was aware that Gosselin was a decided opponent to trephining. He doubted the occurrence of fracture by contre-coup, certainly very uncommon. He agreed with Mr. Hutchinson as to the fallacies of statistics, but he thought they should not be wholly neglected. He would rather wait for symptoms to appear before trephining, than operate in order to prevent their occurrence. The operation was certainly dangerous, but, with antiseptics, there was far less risk than without. He could not say positively whether the success was due to the operation or not, but he believed it was; he could not see on what principle simple incisions into the scalp could operate. There was no doubt that in his case the epilepsy was due to reflex irritation following a fracture of the outer table of the skull, and not to direct pressure on the brain or its membranes.

The Society then adjourned.

MEDICAL SOCIETY OF LONDON.

Renal Inadequacy.

AT the meeting on Nov. 24th—the President, Dr. Cockle, in the chair,—notes of an interesting case of Dilated Aorta, with unusual respiration, were read by Dr. Lownds, which gave rise to discussion, in which Drs. Day, C. T. Williams, F. de H. Hall, and Ewart took part. The patient was a man seventy-nine years of age, with marked and extensive atheromatous degeneration of aorta, coronary and cerebral arteries, and great enlargement of the heart, the character of the respiration being that known as the "Cheyne-Stokes' breathing."

Dr. ANDREW CLARK then read a paper "On Renal Inadequacy." He began by remarking that he was often painfully struck by the great number of people suffering from ill-health of which no sufficient explanation could be given. There was, he said, no doubt that the progress of knowledge was steadily lessening this ignorance, and explaining, by the discovery of dynamical or statical conditions hitherto overlooked, cases supposed to have their origin in the distant ancestry of the patient, and believed to be practically inexplicable. Some of these cases, he believed, took their rise in a feeble and disorderly nervous system, some in a vicious digestion, some in an imperfectly acting skin, some in unsuitable conditions of life and work, some in the abuse of tea, coffee, tobacco, alcohol, and other narcotics, and some in the derangement of the chemical changes which accompany and determine assimilation and deassimilation. There remained, he thought, numbers sufficient to demand and to reward inquiry. Many of these cases of ill-health found their explanation in deficient excretion. As examples of this, he mentioned cases of anæmia and chlorosis due to fæcal poisoning, and curable by purgatives. But a far larger number, he believed, were due to a deficient excretion of urinary solids. "By renal inadequacy I mean that state of kidney in which it is unable, without material diminution of quantity, to produce a urine containing the average amount of solids and of a specific gravity greater than 1014." The deficiency of solids chiefly affects the urea and uric acid. The urine was pale, almost invariably free from albumen, and deposited no casts. He did not profess to determine what was the exact pathological state of the kidney; but he conjectured that it was one of slight withering and induration, just as sometimes the skin is found withered, hard, and incapable of producing a true unctuous sweat. This renal inadequacy had, so far as he could see, no characteristic symptoms, and we found it out only by searching for a cause which should be found adequate to the explanation of the patient's trouble. The symptoms and signs most commonly associated with renal inadequacy were flatulent dyspepsia; palpitation, with a very feeble and interrupted capillary circulation; a dry, shiny, waxy skin; numbness, tingling, cramps and pains in the limbs, occasional flushes, worry of brain, and general nervousness; sometimes thickening of the terminal joints of the fingers, and sometimes, but rarely, evidences of gout. One knew in a given case that these symptoms were due to renal inadequacy, not merely because there was a grave deficiency in the excretion of urinary solids, but because whatever diminished that secretion, or whatever added to the amount of solids to be excreted, invariably within a short time aggravated the patient's sufferings. Three things were of great importance in these subjects. They are exceedingly vulnerable; they repair very slowly the damage done by accident or disease; they bear very badly the shock, however slight, of surgical operations—a fact mentioned by Sir James Paget (Clin. Lectures, p. 44). As to prognosis, this state seemed capable of indefinite prolongation without serious secondary injury to the organism. Under unfavourable circumstances and bad management death might occur from some local inflammation, from cerebral or other hæmorrhage, or from the so-called pyæmic fever springing unexpectedly out of some, perhaps trifling, surgical operation. He then enumerated what he considered the special characters and appearance of patients who had been the subject of renal inadequacy for over four or five years:—"They have at least a marked and striking physiognomy; they increase in flesh; they become puffy without being distinctly œdematous; the skin becomes

drier, more shiny, and yellower; the features swollen almost to distension; the pupils are dilated; the lips and cheeks of a bluish red; the articulation deliberate and somewhat difficult, and the whole intellectual tone and manner subdued and slow." From one side the physiognomy was like that of pernicious anæmia, from another like that of chronic Bright's disease, and yet it seemed distinct from both. As to treatment, much might be done by good management, by which he meant the adjusting of the quantity and quality of the food to the diminished excrementitious activity, the withholding of such agents as directly lessen the secretory power of the kidney, aiding the kidney in its work by making the supplementary excretory organs fulfil that part of the work which the kidney was unable to do, and generally by placing the patient in those conditions which would give the organism the greatest power for resisting the inroads of disorder, and for making sufficient compensation when complete repair was unattainable. The tepid bath, followed by vigorous friction, the use of warm clothing, and the avoidance of passing exposure to cold and damp, with gentle exercise daily in the open air, were indicated. The diet should be light; stimulants should be avoided except to the extent of one glass of claret or other light wine, twice a day. The medicines he had found most useful were small doses of arsenic with reduced iron at meals, and an occasional mercurial alterative. If digestion was disturbed, he disontinued the iron and arsenic, giving the patient bitters with alkalies between meals, and a mercurial alterative every third night for two or three times. He concluded by narrating a case which he first saw some years ago. By a strict adherence to a limited dietary, and by the use of purgatives and diaphoretics this patient improved so much as to consider himself quite well; whereas, when he was taking food and wine every two hours, it seemed that the more he took the worse he became. A very remarkable fact about this case was that as his supplies of food and wine were reduced, the patient's urine steadily rose in density from 1003 up to a very fair standard; and in three weeks he left town declaring himself quite well. When seen six months ago this patient seemed and declared himself to be quite well, his only complaint being that he could not relax his dietary without being ill.—Dr. C. T. WILLIAMS said these cases were generally treated as dyspeptics. He asked whether weight was gained or lost under the restricted diet, whether there was corpuscular deficiency or excess in the blood, or any signs of anæmia.—Dr. GILBART SMITH asked whether it was due to renal defect or blood change. Did the kidneys refuse the blood, or did the blood refuse to go to the kidneys? Had these organs been examined after death?—Dr. ROUTH said there was no proof that the author's dictum was correct, and inclined to believe the ailment due to defective assimilation, and therefore lessened amount of salts in blood and urine, rather than to renal inadequacy.—Dr. DOWSE had seen several cases similar to those described by Dr. Clark, but had never examined the kidneys after death. He did not for a moment doubt the existence of such a condition as renal inadequacy.—Dr. SYMES THOMPSON agreed that the kidneys must be at fault in these cases. He had not known that a diminished diet could increase the specific gravity of urine.—Dr. EWART wished that we could detect the condition of renal inadequacy before the cases had gone so far as that only a rigid diet would keep them in health.—Dr. ANDREW CLARK replied, urging the facts that proved the existence of such a state as renal inadequacy; that retention of excreta leads to disease, and that in a case he had at the London Hospital nitrogenous diet increased the defective action of the kidneys. Some of the patients gained weight, others lost flesh on the strict *régime*. The blood did not appear abnormal. Apparently normal skin sometimes refused to perspire normally. Why should not a kidney which refused to act yet show no apparent change?

NORWICH MEDICO-CHIRURGICAL SOCIETY.

THE Medico-Chirurgical Society of Norwich is one of the oldest and best in the country. It has always had among its members several of more than local reputation, and although the capital of East Anglia has lost much of its old fame as the abode of literary and scientific men, the representatives of the medical profession there still number among them some of the most skilful surgeons and physicians of the day. Every year one of the members of the local medical society reads a retrospective address, in which he reviews the work of the past session; and this year that task has been well discharged by Mr. W. H. Short. The address is of too exclusively local interest to be published in full in our columns, but we cannot but recognise the testimony it bears to the amount of good work done by the Society. Among the papers of surgical interest were more than one in reference to urinary calculi. A case of Cancerous Undescended Testicle was shown. Mr. Cadge read the paper published by us last week, and another on a Sarcoma of the Femur, in which he amputated at the hip-joint, using Davy's lever to control the hæmorrhage. One of the most interesting of the medical cases related was that of a child eight months old, who died from the spontaneous rupture of a hydrocephalus. In addition to a great quantity that was lost, no less than nearly eight pints of serous fluid was collected in a pail; the child also suffered from a spina bifida. Two cases of Aphasia without coexistent paralysis were detailed by Dr. Bateman, who has made this subject his own. Dr. Eade read a very interesting paper on a case of post-puerperal venous thrombosis with pulmonary embolism, in which there also appeared to be general arteritis. A case of Poisoning by Podophyllin was also recorded. But we need say no more to show that the work done at this provincial Society has been of no mean order, and must have been of great benefit to their members.

Reviews and Notices of Books.

A Treatise on Chemistry. By H. E. ROSCOE, F.R.S., and C. SCHORLEMMER, F.R.S., Professors of Chemistry in Owens College, Manchester. Vol. II.: Metals. Part II. London: Macmillan and Co. 1879.

THE Inorganic portion of this excellent treatise is now, we presume, finished. The volume just published quite maintains the standard of the two earlier ones, for it is lucid, full, and practical, and admirably illustrated. At the end we find a tolerably full account of spectrum analysis; an interesting section on the natural arrangement of the elements, founded on the so-called periodic law first pointed out by Newlands in 1863, and since elaborated with great care by Mendelejeff; and, finally, a full account, with ample illustrations, of the liquefaction of oxygen, hydrogen, and the other gases formerly called permanent.

We shall look with interest for the appearance of the volume or volumes on Organic, or Carbon Chemistry; trusting that the authors will supply in them full particulars on some important theoretical and physico-chemical matters at present hardly touched. The subjects of specific volume, the relationships of chemistry to heat, light, and electricity, and the conditions requisite for chemical action, are examples. A whole volume might, indeed, with advantage, be devoted to theoretical and physical chemistry. Perhaps this may be done, if not now, at any rate in the next edition; and in that case the large and valuable sections on crystallography, spectrum analysis, &c., might conveniently be included in it.

Physiology and Pathology of the Sympathetic System of Nerves. By Dr. A. EULENBERG and Dr. P. GUTTMANN. Translated by A. NAPIER, M.D. London: J. and A. Churchill. 1879.

THIS work was awarded, but did not receive, the Astley Cooper Prize for 1877, and it will be remembered how the fact of its being the work of two authors served to disqualify it for the award. It is a most creditable and painstaking essay, which Dr. Napier has done well to translate. The authors do not content themselves with mere analysis and compilation, but in the physiological portion describe certain experiments of their own, particularly with regard to the functions of the cervical sympathetic. The part devoted to the pathology of the sympathetic system includes, of course, a discussion upon exophthalmic goitre, angina pectoris, and

diabetes mellitus, besides other conditions in which the connexion with sympathetic disorder is less obvious. After citing cases of Addison's disease in which sympathetic nerve-change was found, and also where it was not found, the authors conclude that, even supposing it to be proved subsequently that changes in the sympathetic plexuses are primary to the suprarenal lesion, the question as to how the symptoms of Addison's disease are brought about would still remain to be answered. As a safe work of reference this essay may be recommended, but it lacks a sufficiently copious index.

Transactions of the Medical Society of the State of New York. For the Year 1879.

THIS is a handsome well-printed volume, abounding in suggestive papers, many of which have a therapeutical tendency. Amongst those which have interested us most is one by Dr. Lawrence Johnston, on the Baptisia Tinctoria in Typhoid Fever, which led to a rather curious discussion upon the slight value of physiological experiment as opposed to therapeutical observation. In this paper the author records several cases in which temperature was lowered by small and repeated doses of the drug, but confessed his inability to explain its action. A report of twenty-eight cases of Effusion in the Pleural Cavity requiring Aspiration, by Dr. W. Clory; a paper on the Use of Jaborandi or Pilocarpine in the Treatment of Puerperal Albuminuria and Convulsions, by Dr. Fordyce Barker, in which the author considers the drug unsafe and dangerous; a paper on the Injurious Effects of Chlorate of Potassa—viz., in causing nephritis,—by Dr. Jacobi; and one on the Adirondack Region as a Therapeutical Agent in the Treatment of Pulmonary Phthisis, by Dr. Alfred Loomis; are but a few of the more interesting medical papers. Others in general surgery, ophthalmology, and gynæcology, are also to be found in the volume, which, it may be added, opens with an excellent address on the Relations of the Medical Profession to the State, by the President of the Society, Dr. St. John Roosa, of New York, an address which for its high tone and thoughtful character is worthy of a wide circulation.

Floral Dissections; illustrative of Typical Genera of the British Natural Orders. By the Rev. G. HENSLOW, M.A. London: Stanford. 1879.

THIS consists of an atlas of plates exhibiting the appearances of the dissected plant. Some of the figures might well have been on a larger scale, but no doubt space was an object, which may also account for the rather close crowding of the figures. The idea of the book is a good one, and we hope it may be largely adopted in schools, where boys should be taught not only to examine the structure of a plant, but to sketch every one of its characters. As an aid to the recognition of structural points and also in the art of sketching, the work before us should prove of value.

HEALTH OF LARGE ENGLISH TOWNS.

FORTY-SEVENTH WEEK OF 1879.

UNDER the influence of the recent unseasonably early winter weather, the rate of mortality continues to increase. In twenty of the largest English towns, containing nearly a third of the entire population of England and Wales, 4894 births and 3488 deaths were registered in the week ending last Saturday. The births were 188 below, while the deaths exceeded by 118, the average weekly numbers during 1878. The deaths showed a further increase of 268 upon the numbers returned in recent weeks, and were equal to an annual rate of 24·7 per 1000, against 21·9, 22·1, and 22·8 in the three preceding weeks. During the past eight weeks of the current quarter the death-rate in the twenty towns has averaged 21·7 per 1000, against 21·8 and 22·5 in the corresponding periods of 1877 and 1878. The lowest death-rates in these twenty towns last week were 15·4 in Portsmouth, 17·2 in Sheffield, 18·2 in Hull, and 20·6 in Oldham. The rates in the other towns ranged upwards to 25·3 in Nottingham, 25·4 in London, 25·4 in Leeds, 26·3 in Norwich, 26·5 in Manchester, and 30·7 in Liverpool.

The deaths referred to the seven principal zymotic diseases in the twenty towns, which had been 442, 489, and 541 in the three preceding weeks, further rose to 544 last week, of which 190 resulted from scarlet fever, 133 from measles, 68 from whooping-cough, and 60 from fever, principally enteric. The annual death-rate from these seven diseases averaged 3·8 per 1000 in the twenty towns, and ranged from 1·4 and 1·5 in Oldham and Nottingham to 6·2 and 6·4 in Leeds and Sunderland. The 190 fatal cases of scarlet fever showed a decline of 19 from those returned in the previous week, and were proportionally most numerous in Sunderland, Newcastle-upon-Tyne, Salford, and Manchester. The greatest fatality of measles occurred in Leeds and Liverpool, and of fever in Liverpool. No less than 20 deaths were referred to diphtheria in London, and but 4 in the nineteen large provincial towns. Only one fatal case of small-pox was registered in the twenty towns; this occurred in London. The Metropolitan Asylum Hospitals contained 46 small-pox patients on Saturday last, corresponding with the number at the end of the previous week; 7 new cases were admitted to these hospitals during the week. Small-pox caused 7 more deaths in Dublin last week, where the death-rate from all causes was equal to 38·1 per 1000.

The metropolitan returns throw light upon the principal causes of the marked increase of urban mortality last week. The 1760 deaths in London exceeded the number in the previous week by 151; of this increase 98 were due to diseases of the respiratory organs. The largest proportional excess occurred among infants under one year of age and among persons aged upwards of sixty years. The deaths of persons aged between twenty and forty years showed a decline.

A MODIFICATION OF SIMS' DUCKBILL SPECULUM.

To the Editor of THE LANCET.

SIR,—I wish to bring before the notice of the profession a modification of the usual form of Sims' duckbill speculum, as sold by the instrument makers.

The blade is made much flatter and somewhat broader, and the part connecting the blade with the handle has a bevelled ring to admit the finger, which takes off some of the strain from the wrist and gives greater facility for manipulation.

The advantage of the blade not being so deeply hollowed is that, when used while plugging the vagina, there is much less liability to catch in the plug and pull it out altogether, as frequently happens with the ordinary form. Anyone

who has been obliged to hold one of the ordinary duckbill speculæ or one with a straight handle ("Simon's") during a sustained operation sometimes lasting more than an hour, as in vesico-vaginal fistulæ, &c., will, I am sure, appreciate the cross handle, which is movable, being only fixed by a screw, can be carried separately, and when required adapted to any sized blade, and which, by bringing the "flexors" into play, gives immense power of traction, and is not nearly so fatiguing as when the straight-handled modification or older-shaped duckbill is used.

Messrs. Arnold and Co., Smithfield, are the London makers, and John Whyte, Dublin.

I remain, Sir, your obedient servant,

ALEX. DUKE, L.K.Q.C.P.I.,
Assistant Physician, Rotundo Hospital.

November, 1879.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 29, 1879.

INDIA is leading the way, so far as the British Empire is concerned, in a reform of the practice of vaccination, which it is now pretty evident cannot be much longer postponed in this country. While seeking to amend her vaccination laws in one important respect, our great Eastern dominion has had the wit and wisdom to remove the one objection which theoretically could be urged seriously against the particular amendment needed. In other words, while on the one hand, taking example from Great Britain, she would introduce compulsory vaccination, on the other hand, she sets us the example of making "animal vaccination," so called, a complement of the compulsoriness. Our Hindustanee and Mahommedan fellow-citizens, to their infinite honour be it said, have played and are playing a prominent part in promoting this reform.

Bombay, according to our present information, would appear to have been the first place to give legislative effect to the views concerning animal vaccination which are claiming so much attention in this country. In an Act of the Legislature of that Presidency, passed in 1877, for the purpose of prohibiting the practice of inoculation, and for making the vaccination of children compulsory within the city of Bombay, it is provided (Section 12) that a child must, if the parent or guardian of the child so require, be vaccinated with animal lymph; but in the event of animal lymph not being procurable (Section 13), the Governor in Council may direct that the operation shall be performed, without the assent of parents and guardians, with lymph taken from human beings. It is now proposed in Bengal to take a step in advance of the Bombay legislation in this matter.

On the 30th of September last the Hon. SAYYAD AHMAD KHAN BAHADUR, C.S.I., moved from his place in the Council of the Government of India for leave to introduce a Bill for enabling the local governments of the Bengal Presidency to prohibit the practice of inoculation, and to make the vaccination of children in certain municipalities and cantonments compulsory. The Bill, of which a copy now lies before us, would be noteworthy if it were but from the fact of its seeking to extend compulsory vaccination in India; but it is especially noteworthy, and indeed remarkable, in that it would make, after a fashion, animal vaccination compulsory. It is hardly less remarkable that this Bill should have been introduced into the Council by a Hindu member, with the approval of his co-religionists and of Mahommedans also. The Bill marks, in fact, an immense advance in educated native thought on this subject in India, and it is singular that the subject which, at the present moment, will most interest people here with regard to it—namely, the provision for animal vaccination—is not even referred to in the speech of the promoter, or in the speeches of the several members of Council who took part in the discussion upon his motion. It would seem as if this form of vaccination were held to be an indisputable and necessary part of administrative vaccination arrangements in India when compulsion is in question. SAYYAD AHMAD KHAN'S observations were devoted wholly to a statement of the reasons which, in his opinion, rendered an extension of compulsory vaccination in India necessary. Optional vaccination there has failed even more conspicuously than it failed in this country to hold small-pox in check. He referred to the immense, almost incredible, loss of life caused by small-pox, especially among young children, in India (100,000 deaths, in round numbers, occurring yearly on an average from this cause in the Bengal Presidency alone), and to the great physical disabilities, notably disfigurement and blindness, which were apt to be occasioned among those who suffered from the disease, but who escaped its fatal effects. He spoke of the inadequacy of existing arrangements for vaccination in view of the gigantic evil which had to be confronted in the prevalence of small-pox, and urged that the time had come, in the view of the more intelligent of the native population, for substituting compulsory for optional vaccination. "Compulsory vaccination," he said, "is a measure for the protection of the lives of innocent children from the results of the folly of their parents, and for the security of grown-up persons from the sanitary evils which arise from the ignorance or apathy of their neighbours." Again, he observed (quoting from a letter addressed to him by a Mohammedan gentleman in the Punjab): "To expect that people will gradually come to the knowledge of benefits derivable from vaccination, and will of their own accord resort to it without necessitating the application of any legal pressure, is a hard-hearted cruelty, and reminds one of the old proverb, 'By the time the antidote is fetched from Irak (Mesopotamia) the snake-bitten is no more.'" Further, he remarked: "In the figurative language of the East, small-pox is called the inevitable bridge which every child has to cross before entering into life, and recovery from the disease is considered second birth. ..... Other diseases are looked upon as accidental, but small-pox is regarded, as indeed it is, almost universal. It touches the keenest of human sensibilities, for there are thousands in this country who, though spared by it from death, still have traces of its violence in the deep marks on the face or the loss of an eye. A law having for its object the security of the future generations of India from a calamity so universal and severe would, if properly put into operation, far from being unpopular, be welcomed by the people of the country."

But inconceivably great as is the importance of this question of the extension of compulsory vaccination in India, and much as we are rejoiced to see it raised in Bengal under such admirable auspices, and let us hope under most favourable circumstances for a successful issue, it is not in this respect that India sets us an example. Here she is seeking wisely to borrow from our experience. But as to the sort of vaccination India contemplates we have much to learn from her. The Bill introduced by SAYYAD AHMAD KHAN for Bengal would make the use of animal vaccine lymph compulsory, and, while not prohibiting the use of human vaccine lymph, would subject that use to certain disabilities. Herein is the peculiar interest of the Bill as affects this country. Observing the signs of the times, the promoters

of compulsory vaccination in India would guide their course accordingly. India, indeed, has the enviable distinction of being the first portion of the British Empire in which an attempt has been made to make just legislative provision for "animal vaccination"—successfully in the city of Bombay, and let us hope that we shall presently have to announce successfully also in the Bengal Presidency.

Sections 13 and 14 of SAYYAD AHMAD KHAN'S Bill read as follows:—

"13. The vaccination of a child shall ordinarily be performed with animal lymph, but in case animal lymph is not procurable, with human lymph; provided the parent or guardian of such child has consented to have the child so vaccinated, or the Governor-General in Council has so directed by notification in the *Gazette of India*, and has fixed the period for which such mode of vaccination shall be adopted.

"14. No vaccinator shall take lymph from any vaccinated child without the consent of its parent or guardian, and it shall be lawful to offer any remuneration to obtain such consent."

The local authorities who may be called upon to enforce the provisions of the Bill, if they become law, are empowered to make regulations for (among other matters) the supply of a sufficient quantity of animal lymph.

We offer no observations on the details of this Bill; they relate to communities and conditions of government of which (not even excepting cantonments, it may be) nothing strictly comparable exists in this country. But it is to be remarked that the provision proposed to be made for animal vaccination in Bengal under SAYYAD AHMAD KHAN'S Bill differs from that in force in the city of Bombay under the Bombay Vaccination Act of 1877. In the last-named Act the parent or guardian of a child may require that animal lymph shall be used for its vaccination, but in the Bengal Bill it is provided that animal lymph shall be ordinarily used, unless the parent or guardian shall object to its use. The proposed provision for Bengal shows a considerable advance upon the provision in force in the city of Bombay. The relative practicability and advantages of the two forms of legislative provision will presently have to be discussed in this country. The Bill to encourage vaccination, by providing facilities for the optional use of animal vaccine, proposed by Dr. CAMERON, M.P., and introduced by him into the House of Commons last Session, followed the Bombay form. In the coming session this subject will again be brought before Parliament under circumstances more favourable than those of the last Session for its receiving due attention.

IT has been alleged that the feeling of uneasiness which undoubtedly prevails in connexion with the subject of insanity and the lunacy laws, owes its existence, or in any case its persistence, to the energy of agitators. We do not question the general truth of this statement; but the circumstance does not, in any sense or degree, affect the fact that there are real grounds for uneasiness; and that, whether public opinion is disturbed or tranquil, a grave peril perpetually threatens the sound but weak or excitable of mind, while a large proportion of the insane are placed at a serious disadvantage by the law as it stands. We have repeatedly urged the need of reform, and although scrupulously careful to avoid even the appearance of "harassing a vested interest," have protested in the name of the profession that the system of "licensed houses," kept for private gain, is a serious politico-social mistake. The premiss on which our argument has been based is one that seems to bear no other construction. The power of holding persons in imprisonment is delegated to private individuals—estimable no doubt, but only human—to be used for their pecuniary profit; and, as if to throw additional trade advantages in their way, the power of committing persons to these private prisons is entrusted to the hands of other private individuals, also to be used in the way of business. The only safeguard the law imposes as a check on this system is the *quasi*-authority of a Board of Commissioners, who must formally inspect these private houses at short intervals, and *may*, if they please, interfere, not magisterially, but after the fashion of informers and prosecutors, in any special case. Beyond this, there is positively no security against the introduction of a sane person into an asylum for the insane, or the prolonged detention of an inmate, beyond that which the fact that a number of persons are, or are presumed to be, acting independently, may be supposed to supply. It will be our present object to show that this safeguard of numbers is wholly illusory.

In a previous article we pointed out that it is impossible to assume the existence of any special competency to determine the difficult question of sanity or insanity, on the part of medical men generally. What they know of the matter is not, cannot be, the result of any skilled perception. There is no general skill accruing to the medical practitioner *as such* in the diagnosis of mental derangement. He may make a shrewd guess as to the condition of a patient, and his habits of observation and acquaintance with physical disease will unquestionably make his guess a better one than that of any average layman; but, we repeat, he has no special skill in the matter. Insanity does not form one of his subjects as a student or practitioner; and it is needless to say that while nothing is to be gained by the general practitioner, physician, or surgeon, as the result of a knowledge of mental medicine, so long as no licensing corporation deems it worth while to include the subject in its curriculum, it is vain to expect this branch of medicine will ever be studied. What happens when an ordinary practitioner is called in to examine a supposed lunatic is simply that he forms his opinion on what he may be told by those who surround the patient, and backs it up by anything strange in the manner, speech, or appearance of the person he is supposed to be examining. In nineteen cases out of every twenty, this is no doubt sufficient. The friends have satisfied themselves that the patient is insane before they send for the doctor, and his certificate is merely a matter of form. There is, however, the odd case in the score, the only one in regard to which the law has any interest. In such a case we protest the testimony of the unskilled certifier is not simply useless, but a delusion and a snare. Without the authority his opinion gives the alleged lunatic could not be incarcerated in a prison-house kept for private gain and from which escape is difficult if not impossible. Without the certificate given by the unskilled practitioner, the cumbrous machinery at Whitehall would be set in motion, and the way to a madhouse, and perhaps to the insanity induced by

residence in an asylum amidst the insane, would be blocked. The certificate is filled up in this case, as in every other, on the ground of statements made by friends. The medical man then adds anything he can himself observe. How little and how vague the indications reported under this head usually are, an examination of any large number of certificates would show, and, with some knowledge of the facts, we do not hesitate to affirm that the bulk of what so appears as grounds of the opinion formed ought to be set down under the second head of the certificate instead of under the first. When a medical man is prompted to question an alleged lunatic on topics concerning which he may have been previously worried to the brink of distraction, it is idle to pretend that the results elicited have been observed by the medical examiner. We will go further, and affirm that the effect of such cross-examination as the insane are commonly made to undergo during the few days previous to their removal to an asylum is of a nature to vitiate the conclusion of any examiner except an experienced expert, and must go far to make the conclusion of the ordeal, though it end at the gate of a prison, a merciful escape. The whole system is wrong and unworthy of a civilised nation. It converts the measures needful to protect the sane into a farce, and embitters the sorrow, while it often inflicts an irreparable injury on the prospects, of the insane. The fact that *two* medical men go through this form separately—if they do—can add nothing to the value of the proceeding as a whole. The strength of a chain is that of its weakest link, and this examination by an unskilled practitioner is a very weak link indeed. Next in the series of precautions is the opinion of the keeper of the private lunatic asylum. This, in the beneficent caution of the law, may be a woman or layman, and in that case a visiting or subordinate medical officer will be the referee. We will not dwell on this subject further than to ask one pertinent question—namely, Is it likely, or to be expected, that if there be *any* ground for receiving a profitable guest at an hotel he will be turned away? and what better ground can be imagined than two certificates purporting to be duly given by independent practitioners? It can make no sort of difference whether these are written on one or two papers, except that the second man to sign may have been influenced by reading what the first has written—a matter with which the asylum keeper has no possible concern. Nothing short of a flagrant fault on the face of a certificate is likely to attract the attention of any keeper of an asylum; and, seeing that the medical certificates are, when they reach his hands, backed by a formal order to receive the patient, signed by a trustee or relative, who is, in fact, a customer of the home, steps are more likely to be taken to amend the error than to give the patient his or her liberty on the ground of a flaw. The responsibility of letting loose a *possible* maniac on the community is too great for anyone concerned. As for the Commissioners in Lunacy, any protection their experience and official impartiality might throw over the process by which a patient is placed in an asylum is rendered nugatory by the fact that, when, in the course of office business, the certificates sent on to Whitehall are examined, the only point noticed is the verbal sufficiency of the report. No question as to the accuracy of the judgment formed arises in this department. A patient may go into one asylum, and be transferred to another, making the round of several houses, and never see the Commissioners, or be seen by them. We fear there is a wrong impression as to the value of the functions performed by the Commissioners in Lunacy as regards the protection of the insane in asylums. That these gentlemen do their work excellently well we have repeatedly asserted, and have recorded our belief that the great benefits which have resulted from the existence of a permanent Board are to be ascribed to the humanity and care with which the duties of the Commissioners have been discharged by the Earl of SHAFTESBURY and his professional coadjutors. But all this relates to the condition of *asylums* and the treatment of *inmates;* it has nothing whatever to do with the question of sanity or insanity as regards the persons imprisoned. The proceedings of the Commissioners with respect to the *personal* state of the inmates of asylums, whether private or public, constitute a farce. The names are ticked off on a list, and faces are gazed upon, old residents being recognised; for the rest, the inspection is a mere form, without effect or influence. Only the specially favoured class of Chancery lunatics are personally cared for—by the Lord Chancellor's Visitors, not the Commissioners. It is for the *asylums* and for general purposes the Board at Whitehall is maintained. The only personal part of the business done by the Commissioners is really done by the clerk, who sees that the certificates are properly filled in. If the names are duly entered, if there is no obvious error in a date, and the doctors and friends have told a tolerably coherent story, the forms are passed. He would be a clumsy manipulator who allowed any noticeable error to appear in papers which were to be sent to the Board? Practically there is no particle of security involved in the supervision of the Board, except the casual chance of a sane or recovered inmate being recognised in the crowd. This rarely happens, and the only surprise in the matter is occasioned by the fact that such a discovery ever occurs. In time the profession and the public will learn to master the *facts*. Until this enlightenment is effected there will be no reform.

LAST session a Bill, entitled the Noxious Gases Bill, was introduced by Mr. SCLATER-BOOTH on behalf of the Government. It was well drawn, and excited great hopes among the thousands whom it affected; but, alas! at the close of the session it fell quietly with the other "innocents." We fervently hope that it will be brought in again, with no substantial changes, as soon as Parliament once more meets, and that the Government which in past time talked so much of sanitary reform will earn the lasting gratitude of sanitarians by pushing it through.

For many years past the nuisance arising from the fumes emitted from chemical works had increased steadily, until at last it became intolerable; and in 1863 the well-known Alkali Act was passed, which turned out a great success, and effected a great improvement in regard to one particular industry. In 1874 this Act was made more stringent. But the very success of the Act has produced new discontent, for it is applicable to alkali works only, and some of the worst offenders are therefore exempt from its operation, while it has become evident that a cure for such evils is possible. Accordingly, the South-Eastern Sanitary Association was

started with the view of arresting the nuisance if possible. Its head-quarters were, and still are, at Blackheath, which appears to be the focus for a considerable variety of noxious smells. Other powerful associations in the North of England took up the matter, and made common cause with the South-Eastern. The result was the appointment of a Royal Commission, which collected evidence in the chief centres of chemical industry, and, finally, issued a well-considered and moderate report. Upon this report the Bill of 1879 was founded.

The first part of the Bill was an amendment and extension of the Alkali Act proper. It provided for the condensation of acids evolved in the manufacture of sulphuric acid, and prohibited the deposition or treatment of alkali waste in such manner as to cause a nuisance. Two widespread and intolerable evils would in this way be abolished or minimised, and means for the attainment of both objects are well known.

The second part extended the operation of the Act to certain other works which were duly specified. The manufacture of nitric and sulphuric acids, of chemical manures, of the products from tar and gas-liquor, and of coke (except in gas-works), were included in this class; provisions were made in regard to noxious vapours emanating from them, and penalties imposed.

The third part dealt with another class of works in regard to which the difficulties are admitted to be greater. Arsenic, copper, lead, zinc, and other metal works; salt-glazing potteries; glass-works in which salt or sulphate of soda is used; cement-works, and tar dye-works, were specified in this class. No definite provisions in regard to these works were enforced, but power was given to the Local Government Board, subject to confirmation by Parliament, to compel manufacturers to adopt any means known to be practicable for the abatement of the nuisances complained of.

The fourth part provided for the administration of the law. The carrying out of the Act was entrusted to the Local Government Board, the expense was to be an imperial charge, the inspectors were to be appointed by the Board, and their number, if necessary, increased. Penalties were to be recovered in the ordinary courts of law, and, in short, the provisions of the Alkali Act, which have worked, on the whole, so smoothly, were to be adopted as far as possible.

Only in a few particulars did the principle of this Bill go beyond that of its predecessors. Of these the most important and valuable were the clauses which empowered local sanitary authorities, after applying unsuccessfully to the chief inspector, to take action on their own account, and recover penalties against offending manufacturers either within or without their own district, and a further clause which enabled proceedings to be taken against a group of two or more manufacturers in cases where it was not possible to fix the blame upon any one. These clauses are of vital moment, and cannot be surrendered.

On the whole, we are not surprised to find that the Sanitary Associations were well content with the Bill, and that they are now anxiously looking forward to the introduction of a similar measure. Petitions and deputations will soon swarm on Mr. SCLATER-BOOTH, who, we fully believe, is sincerely convinced of the justice of the measure, and honestly anxious to get it passed. We do not think he will meet with any serious difficulty. Chemical manufacturers are, on the whole, reasonable men. They know that some such measure must pass before long, and that it will not inflict serious injury upon them. On the contrary, many of the most enlightened among them believe that systematic and vigilant inspection will do them good, not only by rendering them more careful and exact in their methods, but also by saving them from the risk of the fearfully expensive and sometimes ruinous proceedings in Chancery to which they are now at any time liable. This view has been stated to us repeatedly by manufacturers, and we are firmly convinced it is the true one.

Annotations.

"Ne quid nimis."

WATER-DRINKING ABROAD.

IT is only a few weeks since that, in reference to the death of Dr. Leared, we pointed out the great danger to which tourists abroad are exposed who drink freely and without inquiry the water that is put before them in many continental towns and villages. This has again been exemplified by some contributions to *The Times* during the past week, and by a leader thereon in that journal on Monday last. There seems to be every reason for believing that some cases of enteric fever, one of which at least has proved fatal, were due to the drinking of water at one of the hotels of Dinan contaminated with the special poison by which this malady is caused; and hence "A Mourner" cautions travellers against all water-drinking in Brittany. Such a caution comes none too soon; for we have knowledge of other cases contracted during a tour in Normandy and Brittany in the months of August and September. The absence of any attempt at drainage in most of these towns, even when of fairly large size, and the fact that the almost constant source of the water-supply is a well in too close proximity to the cesspool, will readily explain how such cases must inevitably occur if the cesspool be infected with any excreta from a patient suffering from enteric fever. Moreover, as patients are occasionally able to walk about when the disease is fully established or even at its greatest height, the danger is a very great one, and by no means "an infinitesimal risk" as is suggested in the editorial columns of our contemporary. Indeed, we can scarcely understand how any intelligent person, who is acquainted with the mode in which this poison is usually taken into the system, can persuade himself to drink cold water in these towns and villages, if he has once looked at the relative position of the privies and wells. In most of the places in the north of France, which are frequented by visitors, they are almost contiguous. We need scarcely add, therefore, that tourists should carefully avoid cold water, both as ordinarily supplied, and *en siphon*, which is so much in vogue with persons who eschew the beverage in its natural state. The *siphon*, in most cases, contains the same well-water, merely aerated with carbonic-acid gas under pressure, and this, of course, will exert no destructive influence on the poison if it be present in the original water. The ordinary claret, or perhaps cider, in its undiluted form, may be drunk with impunity. Most tourists, and indeed natives, dilute the *vin ordinaire* with water, but this is a great mistake. If it requires dilution, some natural mineral water, such as St. Galmier, must be added, and if such cannot be obtained, the wine must be taken as it is supplied in that

part of the country, and although a little rough, it is by no means an unpleasant beverage. Cold tea, toast-water, and barley-water are recommended by Sir Henry Thompson to his abstaining friends, but great care should be taken that the water with which they are made has been boiled. A similar rule should be followed in other parts of the continent besides Brittany, for the water is not safe from contamination except in a small minority of the large towns and cities; indeed, water-drinking is dangerous even in many of our own small towns and villages, for enteric fever still decimates many of our rural districts, and is the one disease which is always in our midst. It is true that continental drainage arrangements are in general far too simple to prove deleterious to the water-supply of a town *en bloc*, but every cesspool is a source of risk to the nearest well, and our neighbours, like our rural population, pay but little heed to this dangerous proximity. Cases of enteric fever are, notwithstanding the assertion of *The Times*, more frequent on the continent than at home, and even were they not, one would scarcely care to incur the risk of infection when it can be so easily avoided. We are astonished to find such a mischievous theory in relation to this subject advanced by the leading journal as that "the man who is always living in constant apprehension of some danger or other to his health is only the more liable thereby to suffer the very thing he dreads." Enteric fever will not be induced by nervous apprehension, and both the danger and the apprehension will be removed if, in places where we have no knowledge that the sewerage arrangements and the water supply are far removed from each other, we insist on having our water boiled, or else make use of none at all. No advice can be simpler, and carrying it out entails no such hardship as many people imagine.

TREPHINING IN EPILEPSY.

A QUESTION of great importance was under discussion at the Royal Medical and Chirurgical Society on Tuesday last. Mr. Jas. West communicated a case in which the skull had been trephined for symptoms of epilepsy following injury to the frontal bone. The operation was followed by the disappearance of the convulsions, and the eventual recovery of the patient from a state of extreme peril. Mr. West referred to the recent writings and debates on the subject—which has been especially taken up of late in France—in connexion with theories concerning the localisation of cerebral functions. It has been urged that, given a partial epilepsy of traumatic origin, the seat at which the trephine can be applied can be accurately judged by reference to the anatomical distribution of the motor centres supposed to be involved; and in his recent work M. Lucas Championnière gives most accurate details of the manner in which the surface of the skull can be mapped out into regions corresponding to these cerebral gyri. Cases, however, in which this principle can be followed out must be very few, and the remarkable issue of Mr. West's case shows that recovery may take place by trephining at the seat of injury to the skull without reference to any cortical lesion. For the latter—on the doctrine of localisation—should have been in his case near the bottom of the fissure of Rolando in the neighbourhood of the island of Reil on the *left* side, for the patient had *right* hemiplegia and aphasia, as well as epileptiform attacks. As Mr. Hutchinson pointed out, there was probably a lesion on the left frontal lobe at the above spot from laceration by contre-coup (an event of such frequent occurrence after falls on the head, even without fracture at the spot struck, and certainly without fracture at the seat of the laceration). Moreover, in Mr. West's case, although the symptoms were relieved, the relief was not due to removal of depressed bone, for no depression existed, and the dura mater was quite healthy. It would seem, then, that Dr. Powell's suggestion is the right one, that the trephine removed the source of nerve irritation which sufficed to incite the epileptic paroxysm, and the case he quoted, as well as those treated by Mr. Bryant by simple superficial incisions, go far in support of this suggestion. It may be added that trephining for epilepsy was performed in olden days, in the remote past, as a sort of sacred rite, and it is likely that its success in "casting out the evil spirits" was due to the removal of exciting causes, as in this case. Finally, all this should not preclude surgeons from gaining all the help they can from localisation in determining the seat of intracranial abscesses, where, indeed, the trephine can be regarded as the only means capable of rescuing from death. The recent cases reported by Mr. Gamgee and Mr. Hulke are of this nature, only in them the seat of pain, and not the theory of localisation, guided the surgeon in choosing the spot for incision.

ECONOMIC DIETARIES.

THE present winter promises to be a severe one, and although it is satisfactory to note that there is some revival in trade, still the effects will not be immediately felt, especially as the labouring classes have already drawn largely on their resources during the last two years of depression. Indeed, up to the present date, the returns show that there is considerably more pauperism this year than there was at the same date in 1877 and 1878. If, therefore, the weather continues to be severe, a large amount of distress is likely to result. Unfortunately the classes that generally come forward with liberal aid are themselves sadly crippled in their resources, and it is only by the most scrupulous economy that the period of distress will be tided over. Managers of soup kitchens and other institutions for feeding the poor will therefore do well to avail themselves of every opportunity of turning to account all articles likely to furnish food for those seeking it at their hands. There are two items in every household which, during the present period, might well be made use of—the bones and the dripping. Both of these are the perquisite of the cook by time-honoured custom—a privilege, however, that encourages waste if not direct dishonesty. Dripping is a mixture of the melted fat and some of the juice of the meat extracted from joints roasted before the fire. It is a valuable food, since, in addition to a large quantity of carbon, it contains some of the nitrogenous substance of the meat. The cook sells it at a low price to eating-houses, where it is used as a substitute for oil and lard in frying fish. Mixed with flour it makes an excellent and nutritious crust, and as such would be highly valued by the poor, especially children. Bones of large joints are other articles that could be put to good service at the present time. These are usually sold to the rag and bone merchant for about a penny per pound, and pass from his hands to the manure-manufacturers. Broken into small pieces, these bones would go far towards making excellent soup, especially as it rarely happens all the meat has been closely cut from them. Bones, though usually considered unprofitable, must not be accounted altogether a loss, as when properly treated they can be made to yield a large quantity of nutritive material. According to Dr. Edward Smith, shin-bones of beef, after boiling nine hours, lose 19 per cent. of weight, and yield 817 grains of carbon, and 28 grains of nitrogen for each pound, as compared with a pound of lean beef, which gives 1024 grains of carbon and 160 grains of nitrogen. Bones therefore are proportionately deficient in nitrogen, hence their nutritive inferiority to meat, and also owing to the nitrogen being present in the form of gelatin instead of albumen. But they are extremely useful for making economical soups, with lentil flour or oatmeal, which supplies the deficient nitrogenous substance; they serve to give the animal flavour

which renders such soup palatable, and as they yield some fat, they enhance the digestibility of the lentil flour or oatmeal. To get the full value out of bones they should be broken into small pieces, roughly bruised, placed in an earthenware pot, covered with hot water, the lid of the pot luted on with paste, and the whole placed in an oven for twenty-four hours. The stock, thickened with oatmeal, and flavoured with onions, &c., makes a highly nutritious and palatable dish at an extremely low cost. If housekeepers could be persuaded to make a present to the poor during the forthcoming winter of the weekly yield of dripping and bones, a considerable addition to the food-supply, without increased expense to the donors, would be effected.

BROWN-SÉQUARD ON INHIBITION OF THE BRAIN AND SPINAL CORD.

AN interesting communication was made to the Académie des Sciences, at its meeting on Oct. 20th, by Professor Brown-Séquard, on the part played by inhibitory action in the production of symptoms in diseases of the nervous system. All parts of the central nervous system, and a considerable part of the peripheral system, possess this power, and it is so great that it may arrest the movement of the heart or of the chest, the functions of the brain, spinal cord, or organs of special sense. The first point discussed is the inhibitory influence of one part of the encephalon upon another part, or upon the spinal cord. It is well known that a section in the medulla oblongata may arrest the movements of the heart and of respiration, and long ago Professor Brown-Séquard showed that a simple puncture of the medulla or of the neighbouring parts may also arrest these movements and even the cerebral functions, and may arrest also the exchange of material between the tissues and the blood in the entire organism. Recently he has observed other inhibitory effects on a section of the medulla two or three millimeters above the point of the calamus scriptorius. Galvanic irritation of the posterior surface of this section, adjacent to the origin of the first two pairs of nerves, causes no movements in the limbs. The excitability of these parts is lost suddenly and completely in most of the cases in dogs, rabbits, and guinea-pigs. Many experiments have convinced him that this is not a mere loss of irritability, such as an arrest of the circulation might cause, but the effect of an inhibitory influence, due to the irritation caused by the section upon a part of the cervical spinal cord. If the brain of the rabbit or guinea-pig is crushed, a well-marked inhibitory effect is commonly produced. The fore limbs present no trace of movement, but in the hind limbs reflex action lasts a long time, and violent and prolonged convulsions occur after the injury. Numerous experiments upon frogs, birds, and mammals have shown him that encephalic lesions often cause loss of excitability of the spinal cord on the side opposite to the lesion, or on the same side. In a dog, eight months after a section of the right brain, and in a guinea-pig after four months, there was still an inhibition of the excitability of the whole of the right half of the brain and spinal cord. A sudden section of one half of the brain often causes a sudden loss of all excitability in the greater part of the brain behind the section.

The second point of the communication relates to the inhibitory influence of the spinal cord upon itself. Harving succeeded in crushing a portion of the lumbar cord far from the origin of the nerves for the hind limbs, in most cases there was a complete loss of convulsive movements in these members, and an immediate loss of the reflex action of the lumbar enlargement. In the rabbit, section of one half of the spinal cord far behind the origin of the nerves for the forelegs produces immediately marked paralysis of the foreleg on the same side, which lasts for at least eight or ten days. M. Vulpian has observed nearly the same phenomenon in the frog. One of the most remarkable of these inhibitory effects is that which is exerted upon the brain by the spinal cord, or by the sciatic nerve of the opposite side. Section of one sciatic nerve, or of one half of the spinal cord, in the dog, the rabbit, or the guinea-pig, causes remarkable effects. It is followed immediately by a diminution, sometimes even a loss, of all galvanic excitability in one or more portions of the brain, on the side opposite to the lesion of the sciatic or of the medulla. In the rabbit the loss of the sensibility is more considerable and of longer duration than in the dog. All the excito-motor or sensory portions manifest a notable diminution in their properties. This is true of the so-called motor centres, the opto-striate body, the nates, the testes, the internal capsule, the cerebral peduncle, the mesocephalon, the medulla, and the part of the spinal cord which gives origin to the first two spinal nerves. In the dog the diminution in the excitability of the so-called motor centres is greater than in the rabbit or guinea-pig, but in the carnivora there are sometimes islets of nervous substance in which the excitability is increased, even when the neighbouring parts in the affected half of the brain are, on the contrary, like the motor centres, much less excitable than normal. Frequently in these experiments, especially when the excitability of the brain is examined some days after the lesion of the sciatic or of the cord, there is an augmentation of the excitability of the brain on the side corresponding to the lesion, while upon the opposite side there is the ordinary diminution.

Professor Brown-Séquard's conclusions are: (1) That, under the influence of local irritation, many parts of the brain may determine the inhibition of the galvanic excitability of several other parts of this centre or of the spinal cord, either upon the same or upon the opposite side. (2) The spinal cord, irritated in certain points, may determine the inhibition of the excito-motor properties of other parts of this centre, at a considerable distance in front or behind the lesion. (3) The sciatic nerve or the spinal cord may determine, on the side opposite to that on which they are irritated by section, an inhibition of galvanic excitability and other properties of the brain in all its parts, including those in which the psycho-motor centres have been located.

WHAT IS A COLD?

IT is startling to discover how little we know about the commoner forms of disease. For example, a "cold"; what is it? How is it produced, and in what does it consist? It is easy to say a cold is a chill. A chill of what part of the organism? We know by daily experience that the body as a whole, or any of its parts, may be reduced to a considerably lower temperature than will suffice to give a man a cold if the so-called chill be inflicted upon the surface suddenly. Is it, then, the suddenness of a reduction of temperature that causes the cold? It would be strange if it were so, because few of the most susceptible of mortals would take cold from simply handling a piece of cold metal or accidental contact with ice. The truth would seem to be that what we call cold-taking is the result of a sufficient impression of cold to reduce the vital energy of nerve-centres presiding over the functions in special organs. If this be the fact, it is easy to see why nature has provided the stimulus of a strong fit of sneezing to rouse the dormant centres and enable them at once to resume work and avoid evil consequences. This explains why the worst effects of cold do not, as a rule, follow upon a "chill" which excites much sneezing. Shivering is a less effective convulsion to restore the paralysed nervous energy, but in a lower degree it may answer the same purpose. The shivering that results from the effect of a poison on the nervous centres is a totally different matter.

We speak only of the quick muscular agitation and teeth-chattering which occur whenever the body is exposed to cold, and evil results do not ensue. It follows from what we have said that the natural indication to ward off the effects of a chill is to restore the vital energy of the nerve-centres, and there is no more potent influence by which to attain this object than a strong and sustained effort of the will. The man who resolves not to take cold seldom does.

THE AFGHAN HONOURS.

WE are very glad to notice the names of two officers of the Army Medical Department—Deputy-Surgeon General Alexander Smith, M.D., and Deputy-Surgeon General John Hendley—included in the *Gazette* of the 19th, which conferred the distinction of "Ordinary Member of the Military Division of the Third Class, or Companions of the Most Honourable Order of the Bath" on a large number of officers who served through the late Afghan expedition. Dr. Smith has been the Principal Medical Officer of the Kandahar Column from the commencement of operations, and is still the Administrative Medical Officer of General Sir Donald Stewart's Division stationed in Kandahar. Mr. Hendley accompanied the Quettah Column under Major-General Sir M. Biddulph, K.C.B., as Principal Medical Officer, to Kandahar, the Helmund, and Kelat-i-Gilzie during the war, returning with the brigade over the Thall Chotiali route to India. Mr. Hendley has previously seen active service. On the Gambia, in 1855, he was wounded in an engagement between the British troops and Mahometans of Combo; in 1863 he was present with his regiment, the 7th Fusiliers, throughout the Umbeyla Campaign, including the storming of the Conical Hill and the destruction of Lalloo and the villages at the Bonair Pass. For these actions he received the frontier medal and clasp.

SANITARY CONDITION OF SMALL TOWNS.

THE recent steady improvement in the sanitary condition of most of our large English towns is a fact beyond dispute. It is, moreover, as easy of proof that sanitary progress proceeds at a far slower pace in the smaller towns and rural districts. Trustworthy mortality statistics of the smaller urban sanitary districts are, however, seldom available, and hence arises a considerable difficulty in localising the excess of mortality that is known to prevail therein. Dr. J. M. Fox has only recently issued (although it bears date early in February) his first annual report, for 1878, relating to the Mid-Cheshire combined sanitary district, which includes the four rural districts of Altrincham, Congleton, Nantwich, and Northwich, and six of the fifteen urban sanitary districts situated within these four registration districts, or Poor-law unions. It is to be regretted that nine of the fifteen urban sanitary districts situated within these four registration districts (including Crewe and Congleton) should be excluded from the combination, as the small salaries which these individual authorities can afford to pay are unlikely to secure the services of efficient practitioners of public hygiene. Dr. Fox's report contains useful and uniform mortality statistics for each of the ten rural and urban sanitary districts within his combination, with similar statistics for the aggregate of the combined district. We should have been grateful for a tabular summary of the statistics of the ten separate districts, for purposes of comparison, and should have preferred the average rates in the four rural districts and of the six urban districts shown separately. The average rate in a combination of urban and rural districts possesses little value, except for comparative purposes in a series of years. Attaching considerable importance to the mortality statistics of small towns, we have carefully analysed Dr. Fox's figures for the six urban sanitary districts included within his combined district, and the result fully justifies the Registrar-General's belief that it is to improved sanitary condition in our small towns that we must mainly look for reduction of death-rates. The six small Cheshire towns included within Dr. Fox's combined district are Lymm, Middlewich, Nantwich, Northwich, Sandbach, and Winsford; their population ranges from little more than three thousand in Middlewich to rather more than ten thousand in Nantwich. The aggregate population of these six towns in the middle of 1878 is estimated by Dr. Fox at 38,833, among which we find (for the report before us does not show) that the average death-rate was equal to 26·5 per 1000 during last year. When we consider that the average death-rate in twenty of the largest English towns during 1878, notwithstanding their far greater density of population, did not exceed 24·2 per 1000, the marked excess of mortality in these six small Cheshire towns becomes apparent. In the four rural sanitary districts the death-rate in 1878 was but 19·2, and the average rate in the entire combined district was 21·4 (or more precisely 21·38), and not 21·3 as given by Dr. Fox. The zymotic death-rate in the six small Cheshire towns was as high as 5·6 per 1000, instead of 4·4 in the twenty largest towns; infant mortality, measured by the proportion of deaths under one year to births registered, was equal to 172 per 1000, and corresponded with the rate in the twenty towns, although it exceeded by 40 per cent. the rate that prevailed in the surrounding Cheshire rural districts. Thus, whether judged by the general death-rate, by zymotic fatality, or by infant mortality, the sanitary condition of these Cheshire towns appears eminently unsatisfactory. It is to be feared that the nine other neighbouring towns excluded from the combination would not be able to show a much cleaner bill of health. Dr. Fox's report cannot, we should hope, fail to stimulate sanitation in these Cheshire towns. The aggregation of these innumerable small urban districts into combined sanitary districts appears to afford the only hope of infusing life and reality into their sanitary organisation. We wish the Local Government Board would be convinced of the truth of this assertion, and would act upon it.

FUNGUS POISONING AND ITS TREATMENT.

IT is a noteworthy fact that although several cases of fungus poisoning have been reported during the last few weeks both in London and in Paris, in no single instance is it stated that atropia was employed as an antidote. This is the more remarkable, as probably the most perfect example of physiological antagonism with which we are acquainted is that afforded by the power of atropia to counteract the active principle of mushrooms. Muscarine was first extracted by Professor Schmiedeberg of Strasburg, and its properties and mode of action have been amply investigated both by its discoverer and by such able workers as Koppe, Prevost, Alizon, Lauder Brunton, Schiff, and Ringer. When given internally in medicinal doses it produces sweating, salivation, lachrymation, purging, and contraction of the pupil, whilst atropia, as is well known, dries the skin and mouth and dilates the pupil. The antagonism existing between these two great principles can be shown by a very simple physiological experiment. If the minutest trace of muscarine be applied to a frog's heart, its contractions immediately become slower and more feeble, and after a few minutes are completely arrested. If now a drop of atropia be applied to the motionless heart, its action is at once completely restored, and the pulsations continue as if nothing had happened. It is found that in this way a heart may be revived after being motionless for nearly four hours. Brunton has shown that in mammals atropia at once counteracts the effect of muscarine on the heart just as it does in frogs. In a case of mushroom poisoning vomiting should

be promoted by tickling the fauces, or other means, and a minim of liquor atropiæ should be injected hypodermically and repeated at intervals if necessary until the urgent symptoms have subsided. Although atropia is the best, it is probably not the only antidote to muscarine. Ringer and Murrell have shown, in recent papers in the *Journal of Physiology*, that pituri, duboisia, and pilocarpine will all antagonise the action of muscarine on the heart. The antagonism of pilocarpine for extract of aminita muscaria is less marked than that of atropia or duboisia. Thus atropia and duboisia will increase the pulsation of a heart stopped by muscarine thirty beats in a minute, whilst pilocarpine augments the beat only about eighteen in the minute; nevertheless it is found that the increase in the strength is as great after the application of pilocarpine as of atropia or duboisia. It is a remarkable fact that pilocarpine, a sweater and salivator, which slows and weakens or arrests the frog's heart, should antagonise muscarine, which is also a sweater and a salivator, and stops the heart.

ST. BARTHOLOMEW'S HOSPITAL.

THE gratuitous and tattling gossip respecting the surgical appointments at St. Bartholomew's Hospital has given rise to much unnecessary misunderstanding. There are, as far we know, no circumstances that call for a departure from the ordinary method of filling up a vacancy in the surgical staff of the hospital in appointing a successor to the late Mr. Callender. Mr. Willett, as the senior assistant-surgeon, may very properly expect to be promoted to the rank of full surgeon, with care of in-patients. The vacancy thus caused among the assistant-surgeons will, no doubt, be filled up on the same just principle. Mr. Butlin is not only a distinguished student of St. Bartholomew's School, but by his long and valuable services in the hospital and medical school he has established a claim on the governors that they cannot ignore. His appointment as assistant-surgeon will be pleasing to the past and present students of the hospital—and, we believe we may add, to every member of the medical and surgical staff—and acceptable to the profession generally, to whom Mr. Butlin is known as the holder of the Jacksonian Prize for 1873, for his essay on Ununited Fractures.

DEATH FROM CHLOROFORM.

TRUSTING to general impressions only, we fear there is too much truth in the prevalent belief that the number of deaths from chloroform and other anæsthetic agents has of late years increased out of all proportion to the number of operations performed upon persons under their influence. Part of this increase may, no doubt, be attributed to greater facilities for operation which the improvement in surgical art affords. The immunity from pain which the various anæsthetic agents ensure may often be legitimately used as an argument in favour of operative interference on persons who, in former days, would have been allowed to suffer and to die without a chance of relief or escape. Most of us can recall one or more instances of persons literally snatched from the jaws of death by a timely, if desperate, operation. Up to a certain point, therefore, we ought not to complain; we must take the evil with the good. The minor risks of anæsthetics are not to be weighed against the inevitable fatality of a mortal disease. Unfortunately, however, many of the recorded deaths from chloroform do not seem to have occurred among this class of cases, but rather among persons submitted to comparatively trifling operations. The *Leeds Mercury* for the 24th inst. contains the report of a coroner's inquest held on the body of a man who died in Hull Infirmary last week whilst under the influence of chloroform. The ordinary precautions seem to have been observed in the administration, and nothing unusual took place until after the completion of the operation (enucleation of a damaged eyeball), when the heart suddenly failed, and the man soon expired. The post-mortem examination, it is said, revealed nothing to account for the death; all the organs were apparently healthy. It was stated that there had not been a death in the infirmary from chloroform for five-and-twenty years. The lesson to be learned from accidents of this nature is that every operating theatre should always and constantly be provided with all the proper appliances to meet the fearful emergencies which, however rare, are liable to occur whenever anæsthetics are given.

SCARLATINA IN EPSOM COLLEGE.

THE recent cases of scarlatina at Epsom College have been, on the whole, of a mild type. Fourteen cases in all have occurred, all of which were, of course, removed at once to the infirmary, a large building separated from the school by a considerable space. A good deal of alarm was naturally caused by the reappearance of the dreaded disease; and a great many boys having already been removed by their friends, the Council wisely decided to break up the school at once, a month before the proper time. This has accordingly been done, and the Council are now at liberty to make inquiries into the origin of the outbreak, and to adopt all possible means to prevent its recurrence. They hope to be able to make up to the pupils in future terms the present loss of time. That is obviously a matter of minor importance compared with the paramount necessity for a complete elimination of future risk, and a restoration of confidence among the parents. A committee has, we believe, been appointed to carry out a rigid inquiry into the whole matter.

THE MORNING TUB.

ATTENTION has recently been called to the possible bad effects of a cold bath taken without due precautions at this season of the year. This would seem to be an amplification of remarks we offered a few weeks ago on one of the contingencies of sudden immersion in cold water—namely, depression of the vital powers. That such a danger exists does not admit of question. The old, and the weakly of any age, should not be exposed to the risks of too sudden or too prolonged cold bathing. It is never advantageous to plunge the body into cold water, or to employ cold affusions, unless the prompt effect is to stimulate the vessels of the surface and promote the circulation through the skin. This effect should not be deferred. Too much faith is commonly placed in what is called the reaction—namely, the return of blood to the skin after the contraction of the vessels produced by the application of the cold. In perfect health the pallor is instantaneous and immediate, followed by increased redness of the surface. When this is not the result, cold bathing or cold affusion ought to be avoided. It cannot possibly be either useful or wise. No measure, such as standing in warm or tepid water, will suffice to render the use of cold water safe, and it is only prudent to discontinue it, unless the almost instant effect is to increase the rapidity and volume of the circulation through the skin. When the exposure of parts of the body acts healthfully the surface is reddened. This is the test. Whiteness or blueness are indications that cold is inadmissible. Some persons delude themselves by producing a factitious redness by hard rubbing with a coarse towel. The circulation thus excited is only temporary, and the effect of cold on the nerve-centres is masked, not changed, by the device. Better far use warm water to wash with, and sprinkle a little cold lightly, only in such quantity to be agreeable, over the surface, if cold affusion does not at once cause florid redness and a "glow." There is no virtue in the "cold tub" except this effect on the circulation. So far as cleanli-

ness is concerned, the cold bath is a mistake. It simply closes in the dirt on the skin. A good wash in slightly warm water, with plenty of soap, is far better, and has the special advantage of being safe.

THE NATURAL SCIENCE TRIPOS AND HUMAN ANATOMY.

CONSIDERABLE difference of opinion and some excitement have been caused amongst the teachers of science at Cambridge by a recent report of the Natural Science Board, in which, among other alterations, it was suggested that Human Anatomy should be included as a distinct and separate subject in the examination for the Natural Science degree; it was, in fact, to stand in the same position as chemistry, physics, or comparative anatomy. Such a proposition naturally caused some surprise; and so, despite Professor Humphry's able advocacy and great influence, it was rejected by a considerable majority; and human anatomy will, therefore, probably not find a place in the list of scientific subjects for the B.A. degree. Without desiring to underrate the advantages which would be derived from an acquaintance with the details of the structure of man, we cannot help feeling that the voting was right, and that in an examination which cannot and ought not to be restricted to medical students such a subject is quite out of place. A biological student could learn as many of the fundamental principles, and almost as important details, from the careful study of the anatomy of a rabbit as of a man. Human anatomy is strictly a technical subject; the proper place for its minutiæ is in the education of the medical student, and he should be examined therein when he presents himself for a degree in Medicine and not in Arts. Any other arrangement would give it a fictitious importance in the general domain of comparative anatomy, and would seem to be adapted to the special advantage of the medical students of the University, rather than to the advancement of the knowledge of those biological students who study anatomy for its own sake and for the light afforded by the comparative structure of animals to questions of general physiology and morphology. Technical knowledge should only be tested at a strictly professional examination, and should not be demanded from other students.

THE TREATMENT OF TRANSVERSE FRACTURE OF THE PATELLA.

THE discussion on the propriety of cutting down upon and wiring together the fragments in cases of transverse fracture of the patella, which was carried on at the Medical Society on the 17th inst, was of great interest and importance, and demands the careful consideration of surgeons. The cases brought before the Society were of two distinct kinds; in one class, a badly-united fracture having rendered the limb entirely or nearly useless, the operation was performed with the view of restoring the lost function, and with success. All the speakers concurred in their approval of this step. But with these cases others were reported in which the same operation had been performed *for recent* fractures, in which, so far as was stated, no other plan of treatment had been tried, and in which the ultimate result was a matter for hope, or, at any rate, only of doubt. On the advisability of this step, issue was taken. Mr. Lister advocated the operation as the only treatment holding out a certain prospect of a good result in all cases, but insisted that it should only be undertaken by surgeons who were morally certain that no decomposition would follow the operation. He urged that, if he could abolish risk, it was the surgeon's duty to treat recent cases in the same way as had proved successful in the treatment of old cases with a useless limb; while, if all risk was not abolished, it was as wrong to do it in the one case as the other. The facts are these: By some of the well-known methods of treatment a very few cases of bony union have been obtained; in many instances, close fibrous union, leaving the limb little if at all impaired, has resulted from their employment; while, when the fragments are even widely separated, the limb may be as useful as before, as in the cases related by Mr. Bryant. A surgeon may therefore always hope, by comparatively mild measures, to obtain a good result, and we believe this will be more frequently obtained if greater attention is given to relieving the distension of the synovial sac, which was long since shown to be a great factor in the separation of the fragments. Under these circumstances it appears to us to be opposed to the sound principles of surgery, to practise what must be a serious operation to accomplish that which has often been achieved by safe methods of treatment. It is of great importance for surgeons to weigh carefully Mr. Lister's words. He teaches that operations can by antiseptic surgery be made absolutely safe; that no one is justified in operating who cannot previously assure himself that he will preclude the possibility of decomposition occurring in the wound—for what is true of this operation is of course true of all; and this being so, other methods of treatment, which are commonly called milder methods, if liable to fail or give imperfect results, are not to be employed, but are to be in all cases superseded by the certain, the absolutely safe, antiseptic operation. Applying Mr. Lister's argument to the case of aneurisms, he would never pause to attempt the cure of an aneurism by the method of compression, but would at once apply a ligature, and the practical outcome of the antiseptic treatment will be that surgical therapeutics will consist almost exclusively of operations. But can a surgeon have that confidence in his own infallibility that Mr. Lister presupposes? We think not.

POISONOUS COLOURS.

SURELY the time cannot be far distant when all factories in which trades liable to be injurious either to the workpeople or the public are carried on will be placed under systematic inspection. An inquest recently held before Dr. Hardwicke has again pointed to this long-admitted necessity. A girl of sixteen, employed in some metal works, died under circumstances that naturally led to the suspicion that she had been accidentally poisoned by some of the colours used in the works. A careful inquiry followed, and, although no definite proof that the poor girl had died from poison was adduced, it appears but too probable that this was the case. Such deadly poisons as arsenic, lead, and chromic acid and antimony, were shown to be in constant use—some of them at least—in the form of fine powder. No special blame seems to have attached to the company to whom the works belong, and at the first hearing the manager is reported to have said that "the work was conducted in the healthiest possible manner that the process was susceptible of." At the adjourned inquiry, however, it was stated, on behalf of the company, that "they had now ceased using dry colours altogether," which seems to prove that some change was not only desirable but possible. They have acted as humane men, and would no doubt have done so before if they had realised the danger.

The fact is more mischief is done in such things by ignorance than by intention. Scarcely any trade or manufacture is so noxious that its dangers might not be averted or greatly lessened by proper precautions, and to suggest as well as to enforce such precautions would be the natural duty of an inspector. The remedy of inspection which we suggest is as simple as possible. It is applied with the greatest ease in Paris at the present moment, and no injury to trade is pro-

duced by it. It involves no new principle from which, right or wrong, the true-born Briton shrinks by instinct, for dangerous trades are already, with universal approbation, under supervision, and it is by no means costly. It is, in short, so simple and obvious a measure of reform that we should wonder why it had not been effected long ago if we did not by daily experience know the mighty *vis inertia* of ignorance.

SANITARY IMPROVEMENT IN GLASGOW.

IT would appear from recent discussions in the Town Council of Glasgow, and from articles in the press of that city, that doubts exist there among certain educated sections of the population as to the practical value of the sanitary measures which are being so strenuously urged, and have been so largely carried out by the municipality. A *trifling* diminution of the death-rate of the city, or rather borough, is conceded by the doubters, but this is attributed by them, from not being peculiar to Glasgow among cities and large towns of England and Scotland, to "a general wave of health" (whatever this mysterious phrase may mean), rather than to the sanitary efforts of the local authority. Mr. James Morrison, the chairman of the Committee of Management of the Glasgow Improvement Trust, has thought it well to address a letter to the municipality on this subject, which has now been published as a pamphlet. In this letter Mr. Morrison protests against the doubts which have been cast upon the efficiency of the various efforts that have been made for the sanitary improvement of Glasgow, and gives figures to show that in that city, as in other places where like efforts have been put forth, the death-rate has declined almost in exact proportion to the energy and extent of those efforts. Mr. Morrison may take consolation from the fact that Glasgow is not the only place which has among its population persons who affect to decry sanitary measures because the application of such measures over a quarter of a century has not succeeded in removing altogether evils which are the product of centuries of sanitary ignorance or neglect.

THE EXPLOSION AT THE BALLA HISSAR, CABUL: GALLANT CONDUCT OF MEDICAL OFFICERS.

WE have much pleasure in recording the gallant conduct of some medical officers of the Cabul force at the explosion of the magazine and arsenal of the Balla Hissar on Oct. 15th. Directly the noise of the explosion was heard in camp, and it became known that a serious accident had occurred, Surgeon-Majors Bourke, Duke, and Simmonds, with two soldiers of the 67th Regiment, and a party of Kahars (dhoolie-bearers), hastened to the spot, and at considerable risk of their lives—minor explosions occurring constantly, and jars of powder igniting—worked away amongst the débris and ruins to extricate the dead or wounded. They happily succeeded in rescuing five wounded Ghoorkas, who must otherwise have perished. Our correspondent records the incident in warm terms of praise, and adds "the whole Cabul force are loud in their expressions of approval of the gallant conduct of my *confrères*."

DUBLIN OBSTETRICAL SOCIETY.

ON Saturday last Dr. Sinclair, Professor of Obstetric Medicine in the University of Dublin, gave the inaugural address as President of the Society. Dr. Sinclair reviewed the progress of obstetric medicine in Dublin, and detailed at considerable length the difficulties it had to contend against, devoting his attention more particularly to the antagonism formerly shown towards those who practised the obstetric branch of the profession by the King and Queen's College of Physicians in Ireland, within whose walls the meetings of the Society are now held. He suggested that a prize fund of the annual value of £50 should be instituted, to be called the "Evory Kennedy Prize," in honour of the founder of the Dublin Obstetrical Society, the first of its kind instituted in Great Britain or Ireland, to be handed to the author of the best dissertation of the session on a subject to be selected. Dr. Sinclair also mentioned that it is his intention shortly to publish his experience in connexion with the maternity of Sir Patrick Dun's Hospital, which will be of considerable value, as about 7000 cases have come under his observation.

THE EPIDEMIC AT CAPE CLEAR.

SINCE the epidemic of measles has occurred at this place there have been seventy cases under treatment, with a mortality of eighteen. All those recently attacked by the disease are progressing favourably, and the disorder does not seem to be spreading. At present there are about ten patients in hospital, it being very difficult to induce those attacked to enter, although no death has taken place in those admitted, which may be partly attributed to the good nursing and other advantages the patients receive.

DEATH OF HARRY LEACH, M.R.C.P.

WE very deeply regret to announce the death of Harry Leach, M.R.C.P. Lond., Medical Officer of the Port of London. The deceased gentleman died on Wednesday afternoon. An obituary notice will appear next week.

WE learn that Mr. Farrar Herschell, B.A., Q.C., and M.P., has been put in nomination for the vacancy on the Senate of the University of London. Already some of the most distinguished graduates in Arts and Medicine have signed nomination papers in his favour. Mr. Herschell has achieved a commanding position at the Bar and in Parliament; he is marked out by the voice of his profession for yet higher distinctions, and he is just one of those men who do honour to the University, and who are able to defend its interests effectively before the world.

THE Council of the Faculty of Physicians and Surgeons of Glasgow have agreed at their next meeting in December to consider any applications which may be made for the position of Faculty Lecturer. The lectureship, which is open to the whole profession, was established several years ago, mainly for the purpose of stimulating original research. The subject may lie in any department of medicine, theoretical or practical. The lectureship was first held by Professor MacKendrick, of Glasgow, and on the last occasion by Dr. Benjamin Ward Richardson, of London.

THE great usefulness of the St. John's Ambulance Association has been exemplified during the last week, under the following circumstances:—A wine merchant of Tunbridge Wells, a few days ago, was bottling off port wine, and, as is often the case, the neck of the bottle broke, and inflicted a rather severe wound on the hand. Mr. S. Meager (who holds a certificate from the Ambulance Association) happened to be upon the spot, and at once attended to the wound, binding the hand up in a proper manner until the aid of a surgeon could be procured.

THE number of students who have already joined the medical classes of the University of Edinburgh for the session is 1138—viz.: 1st year, 337; 2nd year, 277; 3rd year, 257; 4th year, 267; being 96 more than on the corresponding day of the session last year.

THE Swansea Public Library Society has done wisely to organise a course of science lectures, including so useful a subject as that of "Parasitic Life: its Marvels and Mysteries." Professor Cobbold, F.R.S., has been appropriately asked to treat on a topic which is especially his own.

THE vacancy for a medical officer to the General Post-office, Dublin, caused by the retirement of Dr. Toler, to which we directed attention several months since, has been filled up by the appointment of Mr. Henry Fitzgibbon. The emoluments of the post are about £200 a year. We have heard it stated that Dr. Toler is not to receive any pension after his long services, but trust the rumour may be unfounded.

THE Wexford guardians having reduced the salaries of their medical officers of health by £5 each per annum, and having refused to reconsider the matter, have been informed by the Local Government Board for Ireland that if they adhere to their resolution the Board will be obliged to exercise the powers vested in them, and issue an order fixing the salaries commensurate with the duties the medical officers will now be called upon to discharge.

THE Association of Surgeons practising Dental Surgery commenced its fifth session on Wednesday, the 19th inst., under the presidency of James Salter, Esq., F.R.S. Lond. Some interesting papers were read and discussed. Four new members were proposed for election at the next meeting, the total number of Fellows being now close upon seventy. This fact is interesting, seeing that the society was formed solely with the view of raising the status of an important specialty of surgery.

CHARCOT ON THE PATHOLOGICAL ANATOMY OF PULMONARY PHTHISIS.

WE reproduce here an excellent abstract of M. Charcot's lectures on the Pathology of Phthisis, delivered at the Ecole de Médecine last summer. The abstract is by M. Victor Hanot, and appears in the current number of the *Revue Mensuelle de Médecine et Chirurgie*. It will be seen that M. Charcot confirms largely the recently published ideas of Rindfleisch, and even goes beyond that observer and reverts almost to the opinion of Laennec, in his statements upon the tuberculous character of caseation; and at the same time he relegates pneumonia to quite a subordinate part in the phthisical process.

In a course of lectures delivered in 1877 at the Faculty of Medicine, M. Charcot demonstrated the exact nature of tubercle, and was enabled, by means of a very complete analysis, to definitely establish that cheesy pneumonia is in reality only a *tuberculous agglomeration*. These lectures, abstracted by Dr. Oulmont, were reproduced in this review (*Revue Mensuelle*, Nov., 1877.) In the lectures here about to be summarised M. Charcot expounds the anatomical features peculiar to *chronic phthisis* or *ordinary phthisis*.

The fundamental lesion lies here also in the *peribronchial tuberculous nodule*; but here, on account of the duration of the process, the evolution of the nodule is increased by two new phases; a period of *softening* and a period of *excavation*. Then it may happen, in particularly favourable cases, that the lesions are repaired, hence a *period of repair, of cure*, with different forms. Lastly, the tubercular masses sometimes become, at a certain moment in the morbid process, veritable foci of infection, whence emanate grey granulations which disseminate the disease more or less widely (process of propagation).

Such are the leading chapters of the anatomo-pathological history of *ulcerous phthisis*, which M. Charcot has rebuilt on more solid foundations.

A. The miliary tubercle of chronic phthisis is a peribronchial nodule, and in this it conforms to the unity of plan of structure of the different tuberculous productions. This question of seat is one of the most important in the pathological anatomy of chronic phthisis, and M. Charcot has treated it in full detail.

To Rindfleisch belongs the merit of having been the first to study miliary tubercle from this point of view. The following is in brief what he observed in the matter:—When chronic phthisis begins to be developed the lesion occurs in the lung under the form of small greyish nodules, firm to the touch, slightly transparent, about one and a half millimetres in size, and presenting most frequently a clover leaf (trefoil)) form, sometimes provided with a sort of stalk. These small nodules become united by confluence, and thus enlarged; they then form rounded or irregular (jagged) masses, borne like the leaves of a tree upon more voluminous branches, which represent the stalk. Such is the precise microscopical appearance.

What is then, on microscopical examination, the intimate structure of these leaflets? In order to understand Rindfleisch's description better certain peculiarities in the structure of the lung should be present to the mind. M. Charcot describes this structure as follows:—

The human lung is composed—(1) of bronchi or ramified tubes, for the passage of the air; (2) respiratory sacs, forming the pulmonary mass; (3) a common investment, the pleura; (4) bloodvessels, lymphatics, and nerves. The ramifications of the bronchi are alternate, then dichotomous; the terminal bronchiole ends in a *chambered ampulla*, which represents precisely the primitive lung of the higher batrachian.

The ampullæ, by their union, form an *acinus*, and the acini, by their union, constitute the *lobule*, a small polyhedral mass of about one centimetre in diameter.

Just as each lobe has a bronchus independent of the bronchus of the neighbouring lobe, so each lobule has a bronchiole, which only communicates with that of the neighbouring lobule by the bronchus from which both arise. This bronchiole penetrates into the lobule, and traverses it in all its length, subdividing within it.

The *intralobular* bronchus, at its origin, has a comparatively wide diameter (one millimetre, Sappey). It is divided into branches which come off at a right angle or at an acute angle, and themselves subdivide up to the *terminal bronchiole*. This bronchiole is the end of the canaliculated system of the bronchi, and the commencement of the lung, the organ of hæmatosis. Indeed, it is itself divided into ramusculi of the first, second, or third order, but it bears on its walls the parietal alveoli, and it is terminated by the acinus.

Each acinus forms a small pyramid, with its base peripherally, and measures about one millimetre in diameter in its principal dimensions. The connective tissues surrounding the lobule similarly surround every acinus, and give to each of these small organs a relative independence. In the infant the acini, at first distinct, gradually become fused together to form the lobule, just as these are fused and gradually combined in the old subject.

Pathological anatomy, on its side, bears out this division of the lung into three constituent elements—the *lobe*, the *lobule*, and the *acinus*.

This acinus reproduces the fundamental disposition of the lobule. The *acinous* bronchiole, of about a third of a millimetre in diameter, forming a pedicle, is divided into smaller and smaller branches until it reaches the *chambered ampulla* of the alveolar sac which terminates it.

Throughout the whole of its course this bronchiole bears parietal alveoli, and deserves the name bestowed on it of *respiratory channel* or *alveolar passage*.

The chambered ampulla has been described under the name of infundibulum by Rossignol; of primitive lobule by Sappey; of alveolar complexus, secondary lobule, by Le Fort. The infundibula are *terminal*; they form a chambered alveolar sac at the end of the respiratory channels, whilst these same ramified canals bear in their course simple alveoli, which open into the passages, like the cells of a prison opening on each side of a central corridor.

The arteries follow the bronchial ramifications, and one might call them lobar, lobular, acinous, infundibular, or alveolar arteries.

It is known that the pulmonary artery accompanying the bronchus in the lobule is a *terminal* artery (Cohnheim)—that is to say, that it has no direct anastomosis with the arteries of the neighbouring lobules. Its disposition is the same as that of the lobular bronchus.

The lobular artery penetrates into the lobule by following

the distribution of the bronchus, and thus arrives at the acinous bronchiole. There the bloodvessel ramifies on the surface of the infundibula under the pulmonary epithelium, and hæmatosis takes place in the network. The capillaries give rise to venules, which pass directly into the interacinous connective tissue, and form, by anastomoses, larger and larger branches, of which the common direction is centrifugal with regard to the centre of the lobule. Arrived at the perilobular space, these veins form true confluences, which serve to collect the circulation from several neighbouring lobules. The venous anastomoses are thus very numerous between many neighbouring lobules, whilst arterial anastomoses do not exist.

The lymphatic vessels are extremely numerous; they have been fully studied by Dr. Grancher. Each of the two great systems composing the lung—the vascular system and the aerial system—is plunged into meshes of these vessels. Their general description is then very simple, and should be moulded on the description of the lung itself. The lymphatic vessels are peri-bronchial, peri-lobular, peri-acinous, peri-infundibular. Under the pleura, where this anatomical disposition is admirably seen, the lymphatics injected with Prussian blue form large polygonal meshes (peri-lobular zone). Each of these meshes contains very small meshes (peri-acinous zone), which circumscribe in their turn the peri-infundibular lymphatic zone. The same holds in the interior of the lung, although the lymphatic vessels may be less developed there, and more difficult of injection.

Around the bloodvessels and bronchi the lymphatics take the form of a lacunar network. On transverse section, an artery is sometimes seen surrounded by a real zone of lacunæ, which form small girdling lakes when injected.

Moreover, the peri-vascular or peri-bronchial lymphatic zone is not complete, but simply semilunar. All these lymphatic vessels communicate freely together, and the same injection penetrates at once into the peri-aerial system, and into the peri-vascular system. Further, when a puncture is made into a subpleural lymphatic vessel, and the injection is successful, the fluid is seen to inject first a large number of peri-lobular zones before penetrating into the included zones—peri-acinous and peri-infundibular. Lastly, this same injection, made under the costal pleura, traverses the whole lung, and rapidly appears beneath the mediastinal pleura. From these facts it must be concluded that the pulmonary lymphatic circulation establishes a very intimate bond of circulation and nutrition between lobules most widely separated from each other.

These details established, M. Charcot afterwards studies the *medical anatomy* of the lung. This medical anatomy consists in seeking in sections for the constant place of the anatomical elements,—the relation of the different parts to each other.

M. Charcot then describes a section of the pulmonary lobule in terms similar to those applied to a section of the hepatic lobule. This pulmonary lobule exhibits a polygonal form, in which may be recognised a central, median, and peripheral part. The centre or *intralobular space* is formed essentially by a bronchus accompanied by an artery; a sheath of connective tissue unites them, and in the meshes of this tissue are found numerous peri-bronchial and peri-vascular lymphatics. The middle part of the lobule shows the section of the infundibula, and here and there filaments of connective tissue going from the centre of the lobule to the periphery, separating the acini and carrying the bloodvessels and lymphatics. The periphery or *interlobular* space is composed mainly of connective tissue containing numerous lymphatics and the pulmonary veins. In the liver the most important part of the lobule is the periphery; there occur the biliary canals, the hepatic artery, and the portal vein, whilst the centre is formed by the sub-hepatic vein. On the contrary in the lung, it is the intra-lobular area—that is to say, the *centre*, which contains the most important parts—viz., the bronchus and the artery.

Throughout their whole course the bronchial divisions preceding the lobule are in more or less immediate relation with the bronchial arteries, the pulmonary artery, and the pulmonary vein, and all these vessels are enveloped in a common connective sheath. It is the whole of these structures that M. Charcot designates under the name of "large areas" (*grands espaces*). Now the large areas cease to exist at the point at which the sub-lobular bronchiole penetrates the lobule.

At this point the different aerian or blood vessels which hitherto traversed the peri-bronchial "large areas" side by side are dissociated, for whilst the bronchial artery and the pulmonary artery pass into the lobule by the side of the bronchus, the pulmonary veins take a different course. They are directed towards the pheriphery of the lobule, where they occupy the *peri-lobular* spaces, which Charcot calls "small areas" (*petits espaces*).

All these facts of topographical anatomy are of the highest utility; they allow of the ready recognition on sections of the exact seat of different lesions, and of following out their successive evolution.

These anatomical facts being well established, the summary of the labours of Rindfleisch may be pursued. According to this able histologist it is at the very point where the terminal bronchus communicates with the alveolar passages of the corresponding acinus that the small tuberculous neoplasia is seated; it is found then around the bronchiole at its termination, in the thickness of the wall and around the origin of each alveolar passage.

Rindfleisch supposes that at this point the spurs of the divisions of the bronchi retain the tubercular cells descending from the upper bronchi: that a local infection is produced, whence the tubercle arises. However that may be, if a section be made through a nodule thus formed, one will obtain, if the section involves the three alveolar passages, a figure which will represent in some sort their internal cast—that is, the trefoil aspect above-mentioned. The nodule will be about one and a half to two millimetres in diameter. If this section be examined microscopically it is easily seen that it is not an elementary tubercle, but an agglomeration of nodules, the form of which can still be made out. They are so many concentric rings regularly disposed around a number of centres of formation. Further, two zones can be distinguished: 1st, a central caseous zone, pierced by a jagged aperture, which is none other than the remnant of the alveolar passage; 2nd, a peripheral zone, composed of cells united by a common sheath, which penetrates into the neighbouring alveoli in the form of sessile or pedunculated prolongations, and which is readily recognised to be the embryonic zone, found at the periphery of every tuberculous product, and first described by Grancher.

Such would be the starting point of every chronic phthisis. Gradually the primitive nodule increases by extending in two principal directions—towards the bronchus, and towards the extremities of the infundibula. It spreads also by invading the neighbouring acini. One sees matters proceed absolutely as in so-called caseous pneumonia.

M. Charcot has confirmed the results obtained by Rindfleisch, whilst modifying them in a few points. M. Charcot does not believe in such a limited and systematic localisation of the primitive agglomerated tubercle in the vestibule of the acinus, for he has observed tuberculous agglomerations grafted on bronchi of considerable calibre. Another point of divergence is the following. M. Rindfleisch considers that the product of pneumonia which is developed around the nodule may undergo caseous metamorphosis and contribute to the yellow consolidation. M. Charcot thinks, on the contrary, that the caseification in phthisis always takes place at the expense of the tuberculous neoplasia. One may find, between the nodules, alveoli filled with various elements, which present all the phases of granular fatty degeneration, but nothing recalling the vitreous or caseous degeneration, strictly so called, which occupies the centre of the nodule.

With chronic phthisis a new phase of the process appears. The tuberculous lesion is developed in successive additions of neighbouring trefoils; but at a certain time the islet softens, and the product of this softening is evacuated by the bronchi, a cavity being formed. The history of these cavities forms one of the most interesting chapters of the pathological anatomy of pulmonary phthisis; but, before undertaking it, it will be useful to return with fuller detail to the caseification which precedes the formation of the cavities.

Caseification.—To give a correct idea of the process of caseification, examples must be taken, on the one hand, of pneumonic phthisis, otherwise called superacute caseous broncho-pneumonia, and, on the other, of acute granular phthisis. In both cases the evolution lasts from fifteen to thirty days. Clinically, in the former case, one has to deal with a grave pseudo-lobar broncho-pneumonia; in the second case, a disease of typhoid type, with predominance of thoracic disturbance. At the autopsy there are found, in the first case, tuberculous nodules of variable volume, especially in the lower lobes; there are no grey granulations in the lung

or elsewhere. In the second case there are grey granulations equally disseminated through the whole organ, and so closely that the lungs are literally stuffed with them. These granulations, at a maximum in the lungs, are found also in the liver, kidneys, meninges; slightly everywhere. In both cases, as is known, the analogy, from the anatomical point of view, is as complete as possible; one might say that there is absolute identity. In the first case, if only the smallest tubercles be examined, the field of the microscope will only be able to comprise one or two tubercles; in the second case the tubercles, much smaller, will necessarily appear in larger number. The former tubercles are always developed around the bronchus; the granulations are seated in almost any part of the parenchyma, by virtue of that property of diffusion which they have in so high a degree. Beyond this difference in seat there is likeness. In both cases—two zones, a peripheral embryonic zone, a central caseous zone, not stained by ordinary reagents. The separation between the two zones is marked by an intermediary zone, presenting the aspect of a narrow band, to which reference will again be made. In both cases, it is owing to tuberculous agglomerations, even in that which forms the granulation. The neoplasia must be considered as made up especially of several elementary follicles or tubercles united by an embryonic sheath. Giant-cells, scattered here and there, mark the site of these follicles. These cells form the centre of the area of each follicle; epithelioid cells envelope them in a middle zone; the outer embryonic zones of each follicle are bound in some sort of a framework which embraces all the giant-cells with their epithelioid cells. The tuberculous agglomeration is shown as clearly in miliary tubercle as in the islets of so-called caseous pneumonia.

To understand well the theory of caseous mortification of tubercles of this kind, one must revert to the time when caseification does not yet exist, when the entire tubercle is still in the first stages of its development. These are yet only embryonic cells; they are distinct from each other, but held together by a protoplasmic basis, where are also found the elements of the invaded organ which have resisted the neoplasia—viz., the elastic fibres, arteries of some size, and alveolar bands. But these elements are rendered invisible—drowned, as they are, so to speak, in the neoplasia. A reagent which would reduce the constituents of the neoplasia would make them reappear. And this is what caseification does. The form, indeed, of the caseous zone suggests that the mortification is produced suddenly *en masse*. In that zone all seems very nearly homogeneous, semi-transparent; not the least morsel of it is stained. The elastic fibres have again come into view; here and there are a few relics of giant-cells. What, then, has taken place? The study of the intermediary band above mentioned answers this. This band is formed of nuclei crowded closely together, and which still stain brightly. The cellular protoplasm and the reticulum are atrophied, dried up, and have undergone granulo-fatty degeneration. At a given moment the nuclei themselves undergo the same degeneration, and carmine can no longer colour them. But the red intermediary zone will be carried further and further outwards at the same time as the embryonic zone expands. And thus it is that the tubercle enlarges its domain in proportion as the mortification extends more and more from the centre to the periphery.

All the preceding applies exactly to the tuberculous masses of chronic phthisis. Such is briefly all that is known concerning the caseous mortification of tubercle.

Again, it is very important to distinguish the caseification of the tubercle from that which may seize upon the cellular elements accumulated and retained within the framework of the tissues. This latter caseification is common, and differs wholly from the tuberculous, in which there is mortification of a coherent tissue.

"What is," says M. Charcot, "the course of caseification of tubercle? One view invokes especially the absence of vessels; it is doubtless an important element. It is easy to understand the effects of it in a vast tuberculous agglomeration, but it is most difficult when dealing with an elementary tubercle or tuberculous follicle, for the non-vascular cartilages are nourished, and the tuberculous nodule is not further from vessels than is the ovum from the wall of the Graafian vesicle. It has been said that these elements bear in themselves, *ab initio*, the germ of an early death. The tubercle, they say, is a neoplasia, essentially poor and miserable from the commencement. But this picturesque phrase cannot be taken as a satisfactory reason."

Caseous or vitreous caseification belongs especially to tubercle,—that is indisputable; that it is which lends such interest to the profound researches of which it has been the object. To this modification succeeds softening, the evacuation of mortified parts, and, consecutively, the formation of pulmonary cavities.

(To be continued.)

Correspondence.

"Audi alteram partem."

THE TREATMENT OF TRANSVERSE FRACTURE OF THE PATELLA.

To the Editor of THE LANCET.

SIR,—In your report of the discussion at the Medical Society on the Treatment of Fracture of the Patella, it is stated that Mr. Bryant "considered the plan adopted by Mr. Gould, of dividing the quadriceps tendon in these cases, to be very useful." Had I been able I intended to mention to the Society two cases in which this treatment was adopted. My object in troubling you with this letter is not so much to call attention to them as to disclaim any credit there may be in the practice, and to state that the cases were treated by Mr. Macnamara, with whom the suggestion originated.

The first case was that of a Hansom cabman who was admitted to the Westminster Hospital July 26th, 1878, with a transverse fracture of the left patella, the fragments being one inch and a half apart even before effusion into the joint. On August 10th the joint was fully distended; it was found to be impossible to get the fragments in apposition, and Mr. Macnamara drew off the serous fluid from the joint, then subcutaneously severed the insertion of the quadriceps into the patella, and brought the fragments easily into close contact, and fixed them so with strapping, the limb being placed on a straight back splint. Later on, a plaster-of-Paris splint was adapted. The patient was last seen in August of this year—rather more than twelve months after the accident; he had long since resumed his occupation, could easily hop on the left foot, and the union, which to all who saw the case appeared to be osseous, was so close that it was very difficult to feel the line of fracture.

The second case was a porter at the House of Commons, admitted May 9th, 1879. Next day the distended joint was emptied by the aspirator, and *serous* fluid drawn off. Mr. Macnamara then subcutaneously divided the muscle as in the above case, and finding that was insufficient, also divided the ligamentum patellæ, when the fragments were readily adjusted. The further treatment was the same as in the above case. This patient was the one shown at the Medical Society three weeks ago. There is very close union between the fragments, but it is fibrous, not osseous. The joint is stiff from long use of straight splints; the patella is not adherent to the femur, but moves over it freely. The patient finds his limb so useful that he does his work as well as before, and is loth to enter the hospital again to have passive motion applied. But he has promised to do so, and when the case is completed Mr. Macnamara will have him shown again to the Fellows of the Medical Society.

I am, Sir, yours obediently,

A. PEARCE GOULD.

Queen Anne-street, Cavendish-square.

"BOARD SCHOOLS AND EPIDEMIC DISEASES."

To the Editor of THE LANCET.

SIR,—Being a member of our School Board, and until recently medical officer of health for two urban sanitary districts in this neighbourhood, I read with much interest your article on "Board Schools and Epidemic Diseases" in your issue of the 15th inst., and, with your permission, I will give you the results of our action, which I am glad to say has received your stamp of approval as the "common sense course to adopt."

My experience as a medical officer of health has taught me that the perfect system of house-to-house visitation, &c., which is common in the large municipal and other combined authorities, is wanting in the smaller urban ones, and it was only by the death certificates and other casual means that one could get what was at any time but a very moderate amount of information as to the presence of disease; it therefore seemed to me but proper that the causes of the absence of children from school might be of great use to our sanitary authority.

For some months past measles and scarlet fever have been prevalent here; and, according to the school-attendance officers' report, children were staying at home for these reasons. I then suggested to our School Board the advisability of acquainting the Sanitary Authority with all cases of infectious disease. This they resolved to do. The epidemic of measles, however, spreading considerably, we thought it necessary to close our central infant school from October 24th to November 10th, and I send you the results:—

Average attendance previous to epidemic	270
,, ,, at time of closure	142
,, ,, when reopened	199
Present average attendance	214
No. of families reported to Sanitary Auth. before closing	74
,, ,, during the time closed	14
,, ,, after re-opening ...	3

I would suggest that in all the smaller urban districts where a School Board exists the school-attendance officer should also be appointed inspector of nuisances, for he has a knowledge of circumstances connected with parents and children which no other official can possess, and if they are absent from school he immediately ascertains the cause, and could then deal with it as ordered; and in addition to this improvement in sanitary work, one officer would do the work two are now required for, which would be no doubt a strong recommendation in favour of such a course.

Unless some such plan is adopted I fear large schools, massing together numbers of children, will become not only centres of instruction, but foci of disease.

I am, Sir, yours, &c.,

WILLIAM HENRY ELLIS, M.R.C.S.E.,
Surgeon to the Saltaire Infirmary, and late M.O.H for the Shipley and Windhill districts.

Shipley Hall, Yorkshire, Nov. 28th, 1879.

"TRAUMATIC ORIGIN OF COLD ABSCESS."

To the Editor of THE LANCET.

SIR,—In your review of my paper on the "Traumatic Origin of Cold Abscess," in THE LANCET of Oct. 25th, you take exception to the description of one of my cases, in which I state "that the digitation of the serratus magnus muscle at the eighth or ninth rib had been torn from its attachment."

Your reviewer says, "As this muscle is not *fixed to the ninth rib*, and as *it ought never to be a matter of doubt which rib is exposed in a wound*,[1] and as this discovery was only made after a very free opening of an abscess which had been forming for some months and had burrowed extensively, we must hesitate to accept evidence so obviously imperfect."

By referring to Winslow's Anatomy, 5th edition, translated by Douglass, p. 176, sec. 161; Quain, 7th English edition, vol. i., p. 207; Erasmus Wilson, 4th American edition, p. 226; Leidy's Human Anatomy, p. 202; Bourgery and Jacobs' Anatomy, translated by P. C. Comstock, plate 7 and description; Dunglison's Dictionary, 6th edition, p. 680, you will find that each of these authors state that the serratus magnus muscle frequently has an attachment to the *ninth rib*.

As the patient referred to was in a very critical condition at the time of the operation, I did not of course make a particular examination to ascertain the exact point of rupture, as it was of no importance whether the rupture was from the eighth or ninth rib.

The source of the abscess was discovered, when we found that there had been a rupture of the muscle, and by giving free exit to the pus a most valuable life was saved.

Had the discovery been made at an earlier period, and the same treatment adopted, he might have been saved many months of suffering with its attending dangers of pyæmia.

I am, Sir, yours, &c.,

New York, Nov. 10th, 1879. LEWIS A. SAYRE, M.D.

[1] The italics are mine.

*** No doubt the serratus magnus may occasionally be attached to the ninth rib, but the occurrence is so unusual that it is not mentioned by Ellis, Gray, or Heath. That does not affect our criticism. The want of accuracy in not observing the precise rib affected may possibly have extended to other particulars. If Dr. Sayre counted the rib he ought to have been able to decide which it was. If he did not count, he was not justified in giving it any number at all. Be that as it may, we maintain that Dr. Sayre signally fails to establish his proposition. He has furnished *no proof whatever* that the detachment of the muscle was the cause rather than the result of the abscess.—ED. L.

ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—Your excellent article on Honours to Medical Officers, in THE LANCET of the 27th September, 1879, is opportune, seeing that another delay has occurred in the issue of the long-expected Warrant; and it is to be hoped that before it is too late Colonel Stanley will see the necessity as well as the justice of redressing the complaints to which you so forcibly refer, and which have always been and will continue to be standing grievances so long as they remain unredressed.

The authorities may rest assured that nothing less than a complete reversal of the policy hitherto pursued towards the Medical Department will attract a sufficient number of able candidates and satisfy the legitimate aspirations of its members. Why, it may be asked, should honorary or titular rank be withheld from the medical officer who has numbers of men under him, while the paymaster has a military rank and title, and not a single man under his command? Surely this is a singular anomaly. Titular rank should be granted to medical officers as in other armies; relative rank having no meaning to the uninitiated, and, except in the matter of choice of quarters, being perfectly worthless to the possessor. Seeing that medical officers hold command in the Army Hospital Corps, in station hospitals, &c., that their duties in the field necessitate their being under fire, and that, although not so much exposed to danger in that respect as their so-called combatant brethren, yet the losses among them from all causes in recent campaigns (great and small) have been found to be much greater than among the latter, I think it may be fairly conceded that something more than the bait of increased pay must be held out before the medical branch of the army will attract recruits.

Change the designation of the department in some such way as the committee appointed to inquire into the subject recommended, grant titular rank as in other armies, and let a fair proportion of honours and rewards be bestowed on medical officers, and the British medical man will be found no more exigent than others. But so long as the military authorities choose to evade this part of the question, a Warrant which merely "increases pay and improves pension" will not be accepted "as a universal panacea for all grievances," however powerful the financial lever may be in other respects, and the British taxpayer will be obliged to put his hand into his pocket in vain to provide an efficient and contented medical service.

I am, Sir, your obedient servant,

India, October 31st, 1879. Z.

THE CASES OF TYPHOID FEVER AT THE CHESTER ASYLUM.

(From a Correspondent.)

THE cause of the outbreak of typhoid fever at the Upton Lunatic Asylum, near Chester, has now been discovered. It is due to the total failure of the new drainage system which was completed last July at very great cost. The Local Government Board have sent down an engineer during the week in response to Dr. Davidson's suggestion, and on the

drains being examined it was found that they were thoroughly clogged, the fall given to them being insufficient to allow the sewage to flow freely away, the result being the stagnation and fermentation of the matter in the pipes, and the production of sewer gas which penetrated into the asylum. There is no truth whatever in the statement which has obtained currency, that a young woman had been admitted as a patient who was suffering from the fever. The fact is that the first cases were those of men who were living in the detached convalescent building where the drainage has been found to be more defective than anywhere else. These men were also engaged on the land employed for sewage distribution. The drainage of the chaplain's residence was also found to be extremely defective; it is entirely independent of that of the asylum, and is conveyed into cesspools at no great distance from the house. The drinking water of the chaplain's house is also questionable as to its purity. Dr. Davidson, the medical superintendent, has, I believe, made great efforts to ascertain the cause of the outbreak, and now that it is discovered the best means are being adopted in the daily flushing of the sewers to prevent any fresh cases from arising. The cases, some twenty in number—one of which, the chaplain's wife, proved fatal—are now, with the exception of four, convalescent, these four being male inmates who are suffering from a severe form of the disease. Every precaution is being taken by Dr. Davidson to prevent the spread of the fever, and as no cases have recently occurred, it is hoped the epidemic has succumbed to the sanitary precautions adopted. The Government engineer has entirely condemned the system of drainage, and it is to be completely reconstructed. For two years and over the sewage of the asylum has been as great a nuisance to the residents in the suburbs of Chester as it has been a difficulty to the Visiting Committee of the Quarter Sessions. The asylum is situated in the Liverpool-road, contiguous to the Bache estate, and just without the borough boundaries of the city of Chester. From the Liverpool-road the asylum appears to be built on the level, but on going to the rear a dip in the land trends away to a brook running through the valley beneath. The incline is not very stiff, and only two fields intervene between the asylum and the brook. One is an arable field and the other pasture. The arable field on certain occasions takes a quantity of the sewage. Down to this point the brook is a pure stream. After this it becomes an open sewer; for a hundred yards farther down its course it receives the effluent water from subsidence tanks erected by Mr. R. S. Hudson on the Bache estate to receive the whole of the Bishopsfield drainage. These tanks send the water into the brook in a very filthy condition, and the stream from this point, where it enters the city boundaries, down to where it finds an outlet in the Dee, is a nuisance and a source of danger to the people living on its banks.

PARIS.

(From our own Correspondent.)

PROFESSOR BALL commenced his course of lectures on Mental and Nervous Diseases on the 16th instant. A numerous audience crowded the amphitheatre. Amongst those present we noticed Professors Brouardel and Bouchard; Assistant-Professors Chantreuil, Charpentier, Damaschino, Duguet, Desprès, Le Groux, Constantin Paul, Ollivier, and Proust; the celebrated alienists, Moreau de Tours, La Sègue, Luys, Lunier, Dagonet, Mesnet, and Ritti; and a number of literary and scientific men, prominent amongst whom were MM. Etienne Arago, Pilon, Bottentint, and Krishaber. The Professor took the History of Mental Science as the subject of his introductory lecture, and rapidly reviewed the different theories which have been successively held by philosophers and physicians.

The following sentence may be quoted here, as it contains Dr. Ball's profession of faith:—

"I would recommend to you a certain degree of scepticism; by that I do not understand that morbid disposition which leads us to receive every new idea with a scoffing smile, but that scientific reluctance to accept an idea until obliged by evidence and overcome by proof. Let us not have to mourn too often over hypotheses, prompt in their appearance, but prompt also to die."

The Professor's remarks were received with the greatest attention; and the termination of the lecture was followed by prolonged applause.

A case of lead-poisoning from the use of red wafers is reported in the *Revue d'Hygiène* by Dr. Margueritte, of Havre. The subject of the observation had been under treatment with saturnine symptoms for some days, but no other clue to the means of ingestion being found, it occurred to his medical attendant that the use of coloured wafers might be the *fons et origo mali*, as instances of lead poisoning produced in this way have been reported to the Congress of Hygiene of Paris by Drs. Manouvriez, Layet, and Marmisse. This supposition turned out to be correct, the patient admitting that, besides putting the wafers to their legitimate use, he often amused himself by eating a few.

The case of the man Prunier, who was recently executed at Beauvais, furnishes a new proof of the necessity of supplementing judicial testimony by scientific evidence—at any rate before carrying out the extreme penalty of the law. In a fit of mania, brought on by alcoholic excess, Prunier assaulted and abused an old woman; he then strangled her and threw the body into a river. Half an hour later he took the corpse out of the water in order to further fulfil his maniacal impulses. Upon being arrested he had no recollection of what had occurred. He was condemned to death, and having refused to petition for a commutation of the sentence, was executed a short time since. Socially Prunier's loss can scarcely be regretted, but the post-mortem examination of his brain throws some doubt upon the justice of his end. Important cerebral lesions were found; amongst others, thickening and adherence of the membranes over the frontal convolutions.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the required examination for the diploma, were duly admitted Members of the College at a meeting of the Court of Examiners on the 20th inst.:—

Allen, T. W. James, Louth.
Bulteel, Marcus Henry, Stonehouse, Devon.
Cock, John, South Molton, Devon.
Jones, Arthur Henry, Llandilo.
King, David Alexander, Finsbury-circus.
Lukis, Charles Pardey, Southampton.
Maclean, Caird R., M.D. New York, Ontario.
Marsh, Charles James, Yeovil.
Morse, Thomas Herbert, Lound, near Lowestoft.
Pepler, W. H. O. Cadmey, Kensington-park.
Pilkington, Francis Sergent, Leyland, Lancashire.
Rake, Beaven Neave, Fordingbridge.
Rice, Edward, Stratford-on-Avon.
Rolston, J. Resatrick, Stoke Devonport.
Thomas, Walter Duncan, Llanelly.
Townsend, Knowlton, Wellington-road.
Webster, Ridley Manning, Colebrook-row.
Wooldridge, Leonard Charles, Bernard-street.

Of the 99 candidates examined during the last week, 66 passed to the satisfaction of the Court and obtained their diplomas; 6 passed in Surgery, and when qualified in Medicine will be admitted Members; the remaining 27 failed to reach the required standard, and were referred for six months' further professional study. Twenty-one candidates who had passed in Surgery at previous examinations, having subsequently obtained a medical degree or licence recognised by the College, were also admitted Members.

The following gentlemen passed the first part of the Professional Examination for the diploma of Fellow of the College at a meeting of the Board of Examiners on Tuesday and Wednesday last:—

Henry Finch, Cambridge and University College Hospital; James Taylor, Glasgow; James Brown, Birmingham; Herbert Henry Tidswell, St. George's Hospital; John Barlow, Glasgow; William A. Duncan, St. Thomas's Hospital; Frederic Dale, Cambridge and St. George's Hospital; Alexander Haig, Oxon. and St. Bartholomew's Hospital; James Turton, Charing-cross Hospital; Frederick H. Norvill, King's College; Wm. H. P. Lewis, St. George's Hospital; Alfred D. Maitland, University College; William H. Sharples, Manchester; Arthur Cutfield, Cambridge; Arthur K. Willis, St. George's Hospital; William J. Collins, St. Bartholomew's Hospital; James Hardie, Manchester and Edinburgh; James H. Lilley, Cambridge and University College.

Of the 32 candidates examined on the above-named days,

14 failed to satisfy the Board of Examiners, and were referred for six months' further anatomical and physiological study.

[In the list of gentlemen who passed the final examination on the 19th inst., the name "John B. Barnes" should have been Henry John Barnes.]

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Nov. 20th:—

Hackman, Leonard King Havelock, Landport, Hants.
Hewitt, John, Leaf-square, Manchester.
Munyard, Thomas Guillaume, Coombe Bury, Kingston-hill.
Neale, William Henry, Boundary-road, N.W.
Pound, Francis Joseph, Odiham.

The following gentlemen on the same day passed the Primary Professional Examination:—

Arthur Kent Bissill, St. Bartholomew's Hospital; Elden Harvey, St. Thomas's Hospital; Thomas Henderson Pounds, Charing-cross Hospital; Alexander Mathew Moore, Guy's Hospital; Wm. Henry Quicke, Westminster Hospital.

THE Newry Guardians have increased the salary of Dr. Samuel E. Martin, medical officer to the workhouse, from £100 to £120 per annum.

NOTICES have been published of an intended application in the next session of Parliament for leave to bring in a Bill for the incorporation of a company to convey sea-water from Lancing to the metropolis.

DR. ALFRED GRANDISON has been presented with a valuable clock in gilt frame, inscribed "Presented to Alfred Grandison, Esq., by the Officers of the Dover Union Workhouse, as a parting gift. November 16th, 1879."

Medical Appointments.

ANDERSON, W. H., M.B., C.M., has been appointed Assistant Physician to the Children's Hospital, Newcastle-on-Tyne.

ANGELL, A., Ph.D., F.I.C., has been appointed Public Analyst for the Borough of Andover, at £10 10s. per annum and 5s. per analysis.

BEATTIE, R., M.D., C.M., has been appointed Resident House-Surgeon to the Loughborough Infirmary and Dispensary, vice Pike, resigned.

BOOTH, T. C., M.R.C.S.E., L.R.C.P.Ed., has been appointed House-Surgeon to the Oldham Infirmary.

BUTLER, G. H., L.R.C.P.L., M.R.C.S.E., has been appointed House-Surgeon to the Westminster Hospital, vice Elliott, whose appointment has expired.

CALCOTT, G. W. B., M.R.C.S.E., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Oundle, Northamptonshire.

CARTER, F., L.R.C.P.L., M.R.C.S.E., has been appointed Medical Officer of Health for the Billericay Rural Sanitary District, Essex, at £115 per annum.

CRISP, T., M.R.C.S.E., has been appointed a Resident Clinical Assistant to the Hospital for Consumption and Diseases of the Chest, Brompton, vice Dallaway, whose appointment has expired.

DAVIES, F. J., F.R.C.S.E., L.R.C.P.L., has been appointed Certifying Factory Surgeon for the District of Newport, Mon., vice W. J. Davies, F.R.C.S.E., resigned.

DENNING, F. A., L.R.C.S.I., L.A.H.D., has been appointed Apothecary to the Sligo Dispensary, Sligo Union, vice Nixon, deceased.

DODSWORTH, F. C., L.R.C.P.L., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the No. 2 District of the Brentford Union, vice F. C. Dodsworth, M.R.C.S.E., deceased.

EVANS, A. L., L.R.C.P.L., M.R.C.S.E., has been appointed Assistant Medical Officer to the Leeds Union Workhouse Infirmary and Schools, vice Robbins, resigned.

GRANDISON, A., M.B., L.R.C.S.I., has been appointed Resident Medical Officer to the United Friendly Societies' Medical Association, Leicester.

GRAY, J. A., M.A., M.B., C.M., has been appointed Assistant to the Professor of Medical Jurisprudence, Edinburgh University, vice Affleck, resigned.

HAMILTON, S. G., L.R.C.P.Ed., M.R.C.S.E., has been appointed House-Physician to the Westminster Hospital, vice Butler, whose appointment has expired.

HUME, G. A., M.D., L.R.C.S.Ed., has been appointed Certifying Factory Surgeon for the District of Crumlin, co. Antrim.

LOWTHER, H., L.F.P.S.G., L.R.C.P.Ed., has been appointed House-Surgeon to the Torbay Hospital and Provident Dispensary, Torquay, vice Marsh, resigned.

LUNN, J. R., L.R.C.P., M.R.C.S.E., L.S.A.L., has been appointed Assistant House-Physician to St. Thomas's Hospital.

MUSSEN, A., M.D., has been appointed Certifying Factory Surgeon for the District of Glenavy, co. Antrim.

MYLES, G., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed a Surgeon to Barrington's Hospital and City of Limerick Infirmary, vice Kavanagh, deceased.

NEWSHOLME, A., M.R.C.S.E., L.S.A.L., has been appointed Assistant House-Surgeon to St. Thomas's Hospital.

NUNDY, E., L.R.C.S.Ed., has been appointed a Resident Clinical Assistant to the Hospital for Consumption and Diseases of the Chest, Brompton, vice Gulliver, whose appointment has expired.

O'BRIEN, R., M.B., C.M., has been appointed Medical Officer to the York Friendly Societies' Medical Association, vice Love, resigned.

O'HAGAN, P. J., L.K.Q.C.P.I. & L.M., L.R.C.S.I., has been appointed Medical Officer, Public Vaccinator, &c., for the Castlebellingham Dispensary District of the Ardee Union, co. Louth, at £160 per annum and fees, and £15 per annum as Medical Officer of Health, vice Callan, appointed to the Workhouse and Fever Hospital.

PARSONS, F. J. C., L.R.C.P.L., M.R.C.S.E., has been reappointed Medical Officer of Health for the Bridgwater Urban Sanitary District, at £50 per annum, and for the Port Sanitary District, at £15 per annum.

QUIRK, M., M.D., C.M., has been appointed Certifying Factory Surgeon for the District of Blaenavon, Monmouthshire, vice Pearse, resigned.

RAWSON, W. F., L.R.C.P.Ed., L.R.C.S.Ed., L.S.A.L., has been re-appointed Medical Officer of Health for the North Bierley Urban Sanitary District, Yorkshire, at £70 for one year.

RUTHERFORD, R. L., L.K.Q.C.P.I., has been appointed Assistant Medical Officer to the Durham County Lunatic Asylum.

SHARKEY, S. J., M.B., has been appointed an Assistant-Physician to St. Thomas's Hospital, vice Harley, appointed a Physician.

SHARPE, J., M.D., M.R.C.S.E., has been appointed Certifying Factory Surgeon for the District of Cootehill, co. Cavan.

SHEPPARD, C. E., M.B., L.R.C.P.L., M.R.C.S.E., L.S.A.L., has been appointed Resident Accoucheur to St. Thomas's Hospital.

SKINNER, C. G. L., M.D., has been appointed Medical Officer and Public Vaccinator for the Blackley &c. District and the Workhouse of the Prestwich Union, Lancashire, vice Buckley, resigned.

SMITH, F. P., M.B., M.R.C.S.E., L.S.A.L., has been reappointed Medical Officer of Health for the Shepton Mallet Rural Sanitary District, Somersetshire, at £50 per annum.

STEPHENSON, F. L., M.B., C.M., has been reappointed Medical Officer of Health for the Honiton Urban Sanitary District, at £20 for one year.

TIRARD, Dr. N. I. C., has been appointed a Physician for Out-patients to the Evelina Hospital for Sick Children, vice Hayes, resigned.

TODD, J., M.D., L.R.C.S.Ed., has been reappointed Certifying Factory Surgeon for the District of Newtown-Stewart, co. Tyrone.

TOUGH, W. R., M.B., C.M., has been appointed Medical Officer to Court No. 2128 of the Ancient Order of Foresters, Audlem, Cheshire, vice Jay, whose appointment has expired.

WALLIS, G., M.R.C.S.E., has been appointed a Surgeon to Addenbrooke's Hospital, Cambridge.

WARD, W. J. C., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer of Health for the Harrogate Urban Sanitary District, at £100 for one year, vice Short, deceased.

WATSON, E. J., L.S.A.L., has been appointed House-Surgeon to the North Shields and Tynemouth Dispensary, vice Callender, resigned.

WHERRY, G. E., M.B., C.M., F.R.C.S.E., has been appointed a Surgeon to Addenbrooke's Hospital, Cambridge.

Births, Marriages, and Deaths.

BIRTHS.

COCKERTON.—On the 21st inst., at Oxford House, New North-road, N., the wife of Charles E. Cockerton, M.R.C.S.E., of a daughter.

CORFIELD.—On the 17th inst., at Bolton-row, the wife of William Henry Corfield, M.D., of a son.

MCCLURE.—On the 19th inst., at Worle, Somersetshire, the wife of Thomas McClure, M.D., of a daughter.

MACDOWELL.—On the 19th inst., at Baltinglass, the wife of Francis V. MacDowell, L.R.C.S.I., of a son.

MORE.—On the 21st inst., at the Royal Naval Hospital, Plymouth, the wife of Robert Hall More, M.D., Staff-Surgeon R.N., of a son.

SAMUELS.—On the 21st inst., at Parkgate-street, Dublin, the wife of William Frederick Samuels, L.K.Q.C.P.I., Surgeon, Army Medical Department, of a son.

SWANSON.—On the 24th inst., at Lawrence House, York, the wife of George I. Swanson, M.D., of a son.

MARRIAGES.

DAVIES—RANKIN.—On the 26th inst., at St. James's, Handsworth, by the Rev. J. Sheldon. M.A., Vicar, assisted by the Rev. J. M. Guest, M.A., William Bowen Davies, L.R.C.P.L., M.R.C.S.E., L.S.A.L., of Brynarlais, Llandrindod Wells, to Jessie Constance, second daughter of W. Rankin, Esq., of Beechwood, Handsworth, Staffordshire.

LAWS—GRAY.—On the 15th August, 1879, at Blantyre Mission Station, Shiré Hills, East Africa, the Rev. Robert Laws, M.A., M.D. Aberd., to Margaret Troupe Gray, daughter of the late Charles Gray, of Aberdeen.

DEATHS.

CORRIE.—On the 18th inst., at Grafton House, Leeds, James Johnstone Corrie, M.R.C.S.E.

JESSETT.—On the 11th inst., at Sheffield, George Jessett, Surgeon, aged 63.

PINCHIN.—At Brooklyn, New York, Thomas Fitzmaurice Pinchin, Surgeon.

QUIN.—On the 24th inst., at Queen Anne's Mansions, Westminster, Frederic Hervey Foster Quin, M.D., aged 78.

ROBERTSON.—On the 10th inst., at Tredegar, Alexander Robertson, M.D.

SMITH.—On the 16th inst., Arthur William Smith, M.D., of Auburn, South Australia, aged 31.

WALKER.—On the 22nd inst., at Holland-road, Kensington, Surgeon-Major George Whitaker Walker, late of the Madras Medical Service.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8 a.m. by Steward's Instruments.)

THE LANCET OFFICE, Nov. 27th, 1879.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radiation Vacuo	Max. Temp Shade	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Nov. 21	29·81	N.E.	35	33	..	36	32	0·26	Snowing
,, 22	29·97	N.	34	33	..	35	31	0·15	Snowing
,, 23	30·02	WNW	29	..	..	38	25	..	Overcast
,, 24	30·05	E.	35	35	..	40	29	0·04	Foggy
,, 25	30·21	E.	38	37	..	41	34	0·10	Foggy
,, 26	30·20	E.	35	33	..	37	32	0·06	Overcast
,, 27	30·11	N.E.	33	32	..	40	31	..	Overcast

Notes, Short Comments, and Answers to Correspondents.

THE RUSSIAN RED CROSS SOCIETY.

THE Russian Red Cross Society has issued a report of its receipts and expenditure during the nine months ending the 1st October, 1879. On the 1st January, 1879, the balance in hand amounted to 1,217,325 roubles, and during the seven months following the receipts amounted to 806,707 roubles, of which 71,937 roubles had been especially contributed for the benefit of towns which had suffered from incendiary fires. The expenditure for the period under consideration amounted to 510,208 roubles, of which 233,964 had been devoted to the sick and wounded, 36,072 roubles to extraordinary expenses, 23,365 to sanitary services organised by the Society in the district within which plague prevailed in the Volga, and 79,985 to the succour of the populations which had suffered from incendiary fires at Orenbourg, Iskontsk, Ouralsk, and Isbit. On the 1st October the balance in hand amounted to 1,455,178 roubles.

Dr. Weekes.—We would prefer not to notice special spas.

EPSOM COLLEGE.

To the Editor of THE LANCET.

SIR,—Since the appearance of my last letter in THE LANCET on the subject of scarlatina at Epsom, the total number of cases of this disease has increased to fourteen, and under these circumstances the authorities have wisely determined to close the school. Such a determination will be satisfactory to parents on the whole, though it must result in loss and inconvenience both to them and their sons. The loss will be specially felt by those boys who are being prepared for matriculation and other examinations, the six weeks immediately before Christmas being among the best in the whole year for steady and continuous school work. In spite of this, however, the closing of the school will be generally approved. But though the authorities have merited the thanks of parents in closing the school, they cannot be said to have done equally well in certain other particulars. It is true they have issued two circulars, to neither of which can exception be taken on the score of brevity or good taste. In the first they announce the outbreak of the fever; in the second the closing of the school. But parents will not, and ought not to, be satisfied with these items of information. The least that the governing body can do is to assure all who are interested that the origin of the fever will receive thorough investigation without delay. Occurring as it did in a public school—in a public school under the management of *skilled sanitarians*—occurring also in the middle of a term, and that term an exceptionally healthy one in the country generally,—the outbreak demands, and must receive, an inquiry of the most complete and searching character. Nothing less than this will satisfy the parents of the Epsom boys, and nothing less should satisfy the responsible managers of the school. It seems probable from the occurrence of the epidemic in the middle of the term, and from its rapid and extensive spread, that the *fons et origo mali* will be found to be in the insanitary condition of the College itself. But even though it should be otherwise, and the external origin established beyond a doubt, this by no means accounts for the rapid extension. A sufficient investigation of every part of the school buildings is therefore absolutely imperative.

The Epsom school has proved itself a useful institution, and it depends on its usefulness for its existence. With no ancient traditions or venerable associations—with little or no reputation beyond the boundaries of the medical profession,—what hope can it have of continued prosperity except in continued usefulness? How can such an institution continue to be useful if dangerous epidemics are to recur with such alarming frequency? Unless decisive means are taken to prevent their recurrence, the confidence of parents will be destroyed and the efforts of teachers paralysed. It is most earnestly to be hoped, therefore, in the interests alike of school managers, parents, and boys, that such investigations will be made and such changes effected as will restore the confidence of the profession, and give some assurance of immunity from future danger.

Yours faithfully,

Mildmay-park, N., Nov. 26th, 1879. JAMES WILLIAMSON, M.D.

PRACTICE BY TELEPHONE.

THE Yankees are rapidly finding out the benefits of the telephone. A newly made grandmamma, we are told, was recently awakened by the bell at midnight, and told by her inexperienced daughter, "Baby has the croup. What shall I do with it?" Grandmamma replied she would call the family doctor, and would be there in a minute. Grandmamma woke the doctor, and told him the terrible news. He in turn asked to be put in telephonic communication with the anxious mamma. "Lift the child to the telephone, and let me hear it cough," he commands. The child is lifted, and it coughs. "That's not the croup," he declares, and declines to leave his house on such small matters. He advises grandmamma also to stay in bed; and, all anxiety quieted, the trio settle down happy for the night.

Experimenter.—The physiological effect of oxygen has not yet received the attention it deserves from the profession. Dr. Cornelius Fox's work on Ozone will give the most recent observations.

Mr. J. F. McKechnie. — We cannot prescribe. The case is one for a general practitioner to deal with. Seek advice at once.

X. has forgotten to enclose his card.

THE MEDICAL OFFICER'S STETHOSCOPE.

To the Editor of THE LANCET.

SIR,—A great authority on auscultation has remarked that a new stethoscope requires to be tried on as carefully as a new hat. The reason for this is clear. Some men hear best with a concave ear-piece; others prefer a flat or slightly convex one; but all seem agreed that the ear-piece, whatever may be its form, is the most important part of a stethoscope. Still the shape and size of the chest-end are not without importance; for although medical men generally use the same instrument for all cases, pulmonary as well as cardiac, and for all patients, whether lean or stout, it is, nevertheless, a fact that for the limitation of certain cardiac murmurs, and for the accurate localisation of pulmonary sounds, especially in emaciated patients, a small-ended stethoscope is desirable; whilst for collecting faint, distant, or deep-seated pulmonary sounds, a stethoscope with a large chest-end is to be preferred. It would be inconvenient, however, to carry two stethoscopes about with us. Even one stethoscope of the usual form is an awkward instrument to carry, and many are the devices that have been adopted to overcome the difficulty. In my early days the stethoscope used frequently to be carried crosswise inside the hat, and many Edinburgh graduates of five-and-twenty years ago will remember the circumstance of a medical student having been accused of being armed with a *fe preserver* owing to his stethoscope having rolled out when his hat was knocked off in a snow-balling encounter.

A perfect stethoscope should have the following qualities:—It should be portable under all circumstances. It should be a good conductor of sound. Its ear-piece should be of a shape to fit any ear. Its chest-end should be capable of being adapted to any surface, and it should be suitable for any case. The instrument which I have devised will, I believe, meet nearly all these requirements. It consists of four parts—viz., a stem, an ear-piece, and two chest-pieces. The stem is a wooden cylinder, six and a half inches long, having a uniform diameter of half an inch, with a short entering screw at each end. The ear-piece, of boxwood, ivory, or ebony, is slightly convex on one side, and slightly concave on the other, rather less than the eighth of an inch thick, and about two inches in diameter, with a receiving screw in the centre. No. 1 chest-piece exactly resembles the ear-piece, except in having a diameter of only one inch and a half. No. 2 chest-piece is exactly like No. 1, except that it has a diameter of only one inch. The screws of the ear-piece and chest-pieces are all alike, and are made to fit either end of the stem. They are also reversible, so that the surface applied to the ear or to the chest may be either concave or convex as required. Either chest-piece may be used according to the nature of the case. For cardiac cases and for very emaciated patients I use the smaller one; but for pulmonary sounds in persons ordinarily well-nourished I prefer the larger chest-piece. When the stethoscope is not required for use, the ear- and chest-pieces can be unscrewed and carried in the waistcoat-pocket, occupying about the same space as a crown, a half-crown, and a shilling; whilst the stem can be carried as easily as a pencil-case. Thus, by substituting a couple of nearly flat chest-pieces for the ordinary trumpet-shaped extremity, an elegant and universally applicable instrument is obtained, which even military medical officers, whose pockets have been reduced to the vanishing point, will be able to find room for. Country doctors also, to whom the ordinary stethoscope is a burden when riding, whether carried in the hat or pocket, would find this instrument particularly useful.

Stethoscopes of this description are now made by Messrs. Arnold and Sons, of West Smithfield, E.C., to whom I am indebted for much intelligent aid in executing my design.

I remain, Sir, your obedient servant,

R.V. Hospital, Netley, Oct. 30th, 1879. H. VEALE, M.D.

Dr. R. Anderson. — There is a large German work, by Ehrenberg: "Infusionsthierchen," folio, price £15 15s. Pritchard's History of Infusoria, 1860, is now out of print, and very scarce. Mr. Bogue is, we learn, about to publish a work on the subject.

M. F. G.—Autobiographical Recollections of the Medical Profession. (J. and A. Churchill.)

A PUBLIC ABATTOIR FOR DUBLIN.

AT a meeting of the Dublin Municipal Council held last Monday, a report from the Public Health Committee of the Corporation was adopted in reference to the establishment of a public abattoir on the north side of the city. Mr. Gray, M.P., in moving the adoption of the report, stated that there were 100 slaughter-houses in active operation in Dublin, many of which were in a very bad condition, dangerous to the city from a sanitary point of view, and fruitful of disease and demoralisation. If necessary, another for the south side will be erected next year.

Mr. W. Marston had better apply to the United States Consul for the information required.

Dr. J. S. Scriven.—Clapham-rise, S.E.

TYPHOID FEVER: ADDRESS BY SIR W. JENNER.

To the Editor of THE LANCET.

SIR,—I have read Sir W. Jenner's most able lecture as reported in your journal of the 15th inst., and it has afforded me much pleasure and profit. I think it is a most wonderfully graphic account of the pathology and treatment of typhoid fever. But I find in the treatment he does not mention belladonna; and as I consider this drug most useful in the treatment of typhoid fever, I take the liberty of forwarding a few lines to show its value, as I think, in lowering the temperature, and indeed I think it has some further action and control over the above-named fever, but what it is I am not prepared to say, unless it is by its soothing effect on the nervous system.

I have had the fever twice. The first time I simply took salines, and effervescing mixtures to allay the vomiting. During the whole time I was never confined to bed, but simply felt excessively *prostrated* and hot, with vomiting in the first instance, and latterly a great deal of "rumbling" in the bowels, and was able to remove to the seaside to recover my strength in a month from the beginning.

In the second attack I had, the suffering from vomiting was something terrible. I hardly ever ceased for five minutes at a time for four days and nights, notwithstanding the very active treatment of my medical attendant. During this time I did not feel very hot, but this I attribute to my having to rise so frequently and rapidly in bed, and having no time to put on wraps. After the fourth day the vomiting ceased, and the temperature went rapidly up to 105°. I then began to take ten-minim doses of tincture of belladonna every two hours, had the blinds drawn to darken the room and to accelerate its action in order to get as soon as possible under its influence, and it gave a most cooling and, comparatively speaking, comfortable feeling, with the exception of great pain in the eyeballs, and the temperature came down to about 101°. Eventually I became delirious, and unable to note any effect personally; but the gentleman who attended me stated that my temperature varied from 100° to 104° until the twenty-first day, when a most profuse perspiration set in, after which I became perfectly sensible, but had a dreadful feeling of sinking, so much so that we thought perforation of the bowel had taken place, and consequently collapse coming on. Brandy was, however, administered at once and freely, when I thoroughly revived and felt quite comfortable, but exhausted; but this soon went off after taking brandy and wine very liberally. I then made a favourable recovery, with the exception of a painfully irritable bladder for a few days. (Query: Was this due to belladonna?)

Since then (five years ago) I have always given belladonna, and I feel satisfied from extensive experience that it is really useful both in lowering the temperature and quieting the nervous system.

While on the subject, may I be allowed to say that I am thoroughly convinced from personal experience and observation that many people suffer from typhoid fever without being aware of its existence or confined to bed. The first time that I had it I was not confined to my bed a single day, but walked from my bed-room to the drawing-room (on the same floor), though I had it very typically, having, after rigors and excessive pain in the back, vomiting, high temperature, furred tongue, and dark-coloured, copious, and frequent stools, though never amounting to actual diarrhœa; there was the rash and tenderness over the right iliac region. There is, however, no doubt that typhoid fever may be entirely annihilated by proper sanitary measures, as in this, a village rapidly grown into a small town, we formerly had the fever very severely, so much so as to cause some official inquiry. But now we have got a fair system of drainage, and the fever is very rare; yet I remember the time when we had fifty cases to see in one day, in a population of a little over three thousand, and even now the most cases are in one block (or two) of new buildings. This I attribute to the slop-stone pipe communicating directly with the drain into which the watercloset empties itself. In the other houses, and where we rarely have fever, the slop-stone pipes open (over a grate) into the drain, and so there is no direct connexion with the houses and the drains, consequently no sewage poison can be evolved into the dwellings.

Yours respectfully,

November 17th, 1879. S. L.

A Sufferer.—Cajeput oil has been recommended as a remedy for chilblains. Also solution of sulphate of copper (four grains to the ounce). Information on the subject will be found in THE LANCET, vol. i. 1875, pp. 36, 74, 110.

Dr. Fleming.—The fee named is absurd. Demand the guinea, and appeal to the Local Government Board.

ROYAL COLLEGE OF SURGEONS: PROFESSIONAL EXAMINATIONS.

THE following were the questions on Surgical Anatomy and the Principles and Practice of Surgery submitted to the candidates at the pass examination for the diploma of Member of the above College on the 14th inst., when they were required to answer at least four, including one of the first two, out of the six questions:—

1. Describe, in their position, the several parts in relation with the quadratus lumborum.
2. Describe the operation of tying the subclavian artery in the third part of its course. Give the channels through which the collateral circulation would be afterwards carried on.
3. What are the usual complications of scalp wounds, and the appropriate treatment in each case?
4. What consequences, proximate or remote, may follow a blow upon the perineum? State what would be your early treatment in such a case.
5. Describe the course, symptoms, and treatment of acute inflammation of a superficial bursa.
6. What is the cause of lateral curvature of the spine? Describe the anatomical changes which take place in this affection, the signs of the deformity, and the principles of treatment.

The following were the questions on the Principles and Practice of Medicine submitted to the candidates on the 15th inst.:—

1. Describe emphysema of the lungs. How is it produced? on what diseases does it supervene? and what are the symptomatic and other consequences to which it gives rise?
2. Give the chemical and physical characters of gall-stones. Discuss the symptoms which may arise in the progress of a gall-stone from the gall-bladder to the duodenum. And especially consider the effects of obstruction of the common duct directly on the liver and indirectly on the general system.
3. What are the special uses and doses of the following drugs?—Sulphuric acid, nitric acid, bicarbonate of potash, acid tartrate of potash, iodide of potassium, sulphate of zinc, nitrate of silver, tincture of senega, tincture of Indian hemp, tincture of nux vomica, etherial tincture of lobelia, croton oil, elaterium, tincture of belladonna, and wine of aloes.

Beta's explanation is quite satisfactory to us. But we would suggest that the notices, instead of being distributed broadcast in the form of handbills, should be posted up in conspicuous places at the colliery.

Spes, (Glasgow.)—Any registered medical practitioner can give advice on the matter.

Mr. F. W. D. McGachen should apply at the Office of the Crown Agents for the Colonies, Downing-street, S.W.

"STAMMERING OF THE VOCAL CORDS."

To the Editor of THE LANCET.

SIR,—Permit me to say a few words in extension of Dr. James's interesting observations on "Stammering of the Vocal Cords." Amongst the many theories that have been propounded as to the nature of stuttering (I use this word in the present instance in preference to "stammering," as orthoëpists are inclined to restrict the latter term to a mere clumsiness of the vocal muscles, producing imperfect pronunciation), we find one, that of Neil Arnott (Elements of Physics, 1829, vol. i., p. 603), which explicitly places the seat of the affection in the larynx. Thus Arnott supposed that stuttering consisted in a spasmodic affection of the laryngeal muscles, by which the vocal cords became clamped together for a short time, so as to prevent vibration, at the commencement of each effort of phonation. The suggestion, however, of Serres d'Alais (Mém. des Hôp. du Midi, 1829, p. 371) that many cases of stuttering are caused by a choreic condition of the vocal muscles, through which, when called on to act, they perform a series of irregular gyrative movements, instead of being instantly subservient to the will of the speaker, is in accordance with our everyday experience of stutterers. For hence arises, doubtless, the rapid repetition of various letters, which is so well known a phenomenon of the malady. We may suppose, therefore (and the supposition seems to me to be borne out by Dr. James's observations) that some cases of stuttering consist in a chorea of the larynx, the effect of which is that, on the sufferer trying to speak, the vocal cords at first move rapidly to and from each other, rendering vibration impossible, and permitting a wasteful escape of the breath before phonation can be established. Now it is just this wasteful escape of the breath that the theories propounded by two physicians, who paid great attention to the pathology of stuttering, point. Thus M'Cormac (On the Cause and Cure of Hesitation of Speech, 1828) thought that the essence of the affection consisted in the patient trying habitually to speak when the chest was exhausted of air. And Becquerel (Traité sur le Bégalement, 1848), himself a stutterer, believed that an inability to retain the breath sufficiently long for the purposes of speech was at the root of the malady. But, of course, the effort to speak with an exhausted chest would be the natural result of an inability to retain the breath, and this want of retentive power over the breath is exactly what we should expect from a chorea of the vocal cords, which would prevent a steady occlusion of the glottis. In the practical application of their theories, both M'Cormac and Becquerel had a good deal of success, and it appears beyond a doubt that a great many cases of stuttering can be cured if the patient's attention be directed towards keeping the chest always well filled with air.

I am, Sir, your obedient servant,

Finsbury-square, Nov. 18th, 1879. GORDON HOLMES.

NEWSPAPER NOTICES OF MEDICAL WORK.

THE *Pontypridd District Herald* has the following paragraph in a prominent place:—

"LLWYNPIA.

"LITHOTOMY.—This rare operation was successfully performed last Thursday by Dr. Henry Naunton Davies, Cymmer, and staff, at the above place on a lad named Lloyd, twelve years old. It resulted in the extraction of a renal calculus of the mulberry kind. The lad is progressing very favourably. This is another evidence of the skill of our well-known local surgeon."

This is a bad specimen of a very objectionable kind of paragraph. We may be assured that Mr. Davies is quite innocent of its appearance. But he must have some very indiscreet and fussy friend, who, though medical enough to know the differences of calculi, is so little learned in surgery as to describe lithotomy as a rare operation, and to call upon an uninformed population to gape in wonder at a surgeon for performing it. We cannot so much blame lay newspapers for inserting such paragraphs as we blame medical men who contribute them for publication. The following paragraph from the *Sydney Echo* is liable to the same criticism, and calls for the severest investigation by the Scotch graduates who are belauded for doing their duty:—

"Two important operations were performed this morning at the infirmary. The first case was that of a lad named Percy Chapman, about sixteen years of age, suffering from stone. Dr. M'Laurin successfully performed the operation of lithotomy, after placing the patient under chloroform. Dr. Cox amputated the left foot of a young woman named Louisa Murray, aged nineteen. The bone of the foot had become diseased, hence the necessity for the operation. Both patients are doing as well as can be expected."

HÆMORRHAGE DURING PREGNANCY.

To the Editor of THE LANCET.

SIR,—I read with much interest Mr. Rean's report of a case under the above heading. I have had one very similar under treatment lately, though, to judge by Mr. Rean's description, my case was much more severe, also the hæmorrhage began in the third month.

On August 5th, 1879, I attended Mrs. S—— for a "slight show" and a little pain, for which I ordered complete rest and prescribed opium. She continued to improve till the 18th, when at 11 P.M. I was called in a hurry to see her. I found her perfectly blanched, with a thready pulse of 110 per minute, and rambling in an almost inaudible voice. On proceeding to make a vaginal examination, I found the bed saturated with blood, and the hæmorrhage still going on freely. A clot engaged the os uteri, which I at once removed, applied cold cloths to the vulva and over the pubes, and administered brandy and opium. This had the effect of reviving her in a short time; after that the pains, which I was then told had been frequent, came on with considerable force, so much so that I quite expected to find the ovum come away in a short time. However, I was mistaken, for the pains soon became weak again, and the intervals longer. There was consequently a return of the hæmorrhage; and seeing no possible chance of saving the ovum, I determined to hasten its removal by stimulation with ergot. I administered a large dose (one drachm of liquid extract), and the effect surprised me somewhat, as it produced a little continuous pain, which checked the hæmorrhage again. From this time she gradually grew better, and the brandy, which I had been giving at frequent intervals in small doses, I ordered to be given every couple of hours till I should see her the following day. When on the following morning I did see her, I was much pleased with the improvement in her condition generally, though a slight trickling still went on; for this I prescribed sulphate of magnesia in one-drachm doses, combined with tincture of opium and dilute sulphuric acid, of each fifteen drops every four hours. To my great satisfaction, I found at my next visit this had had the effect of checking the hæmorrhage, and at the same time it served to keep the bowels open, thereby counteracting the effect of the tincture of opium which she had been taking. In a day or two I lessened the dose of sulphate of magnesia to half a drachm, as the former dose had begun to act rather freely on the bowels.

To save unnecessary length of details throughout this rather long case, I may summarily say she had three subsequent attacks, though much less severe, between that time and October 6th, since when there has been no return of the hæmorrhage. Nevertheless, my patient "would not rest contented without a bottle of the medicine in the house," in which she has immense faith, to take a dose of at once in case of need. She now tells me she can feel the child quite plainly, though not so strongly as formerly. She has had six children and three miscarriages, generally in the third month.

I might add that prior to conception Mrs. S—— had been under my treatment for heart disease (a mitral diastolic murmur).

I am, Sir, yours faithfully,

C. B. TOWNSHEND, L.K.Q.C.P.I., &c.

Eastbourne, Nov. 4th, 1879.

MEDICAL OFFICERS IN BRITISH GUIANA AND THE WEST INDIES.

Enquirer would esteem it a favour if "A Bengal Civil Surgeon" would furnish him with further details concerning appointments in the above places. How are they obtained? Is interest required? Are vacancies frequently occurring? Is there any difficulty in obtaining such appointments?

Mr. H. E. Gifard.—If a practitioner undertakes to attend midwifery cases, and sends an unqualified assistant, he evidently fails in his engagement, and the contract in law would, we apprehend, not be binding. We do not know that any action can be taken successfully against a practitioner employing an unqualified assistant, unless some injury to the patient result. But it is clearly wrong in a qualified practitioner to lead a patient to understand that she is to have his attendance, and then send an unqualified assistant. The practitioner in such a case would be in an unenviable position. In signing a death certificate, the actual qualifications should be given, and not the supposed titles attaching thereto.

Pineal Gland.—1. Walshe.—2. Murchison.—3. There can be no reason to the contrary.

THE PHYSIOLOGY OF THE LARYNX.

To the Editor of THE LANCET.

SIR,—It was only two days ago that I received Mr. Holmes's reply to my second letter.

Whatever be the name given to the current theory of voice production, it cannot be denied that the so-called longitudinal tension or stretching of the vocal cords by the crico-thyroid muscles forms an essential part of it.

Mr. Holmes now tries to distinguish between longitudinal tension and longitudinal stretching, although he cannot escape from the fact that in all the experiments yet made upon the larynx, the vocal cords were actually stretched and relaxed to procure a rise and fall in the pitch of the voice. But if, as Mr. Holmes admits I rightly argue, the crico-thyroid muscles have no such action, then I believe that Tyndall, Helmholtz, Wyllie, and others will be the last to say that Müller's experiments are of the slightest value.

I do not deny that notes have been produced in this way "an octave and more above the pitch the subjects in life could have emitted by parallel means." But it is well known that notes thus produced are more like the strains of a penny trumpet than the human voice, and a pure falsetto note has never been emitted by any method of experimentation yet devised.

If therefore, Sir, it should come to be admitted by all, as it has been already by Mr. Holmes, that "the simple and obvious means for altering the pitch of the voice," which are now adopted, are unnatural, it will remain for us to seek some other, and perchance to "go out of our way after" theories which are complex and at first sight indefinite.

To this field of inquiry I again invite him, with a reminder that it may be his luck to fill that "little room" which he tells us is still open for some one holding new opinions on voice production.

Yours faithfully,

C. R. ILLINGWORTH, M.B.

The Camp, Newcastle, Natal, South Africa, Sept. 29th, 1879.

Dr. Joy Jeffries.—We are not aware that the gentleman has written on colour-blindness. The reference was to a case that had been cited in a correspondence in *The Times*. There was, as far as we recollect, nothing very special about the case. A costermonger was at first very slow at sorting colours; but with a little practice he attained average skill, though he may not perhaps have become quite *perfect*. He had a "bad" eye for colour, as some have a bad ear for music, and he had not learnt his colour-alphabet. Training remedied the imperfection.

J. W. G.—The Reading-room of the British Museum, or the Library of the Royal College of Surgeons.

Mr. T. Moore.—Yes.

"ISLEWORTH HOVELS."

To the Editor of THE LANCET.

SIR,—In a late number of THE LANCET you quoted an article from the *Richmond and Twickenham Times*, giving a description of the so-called Isleworth hovels, and you congratulate that paper on the good work it was doing in exposing the existence of such places. There is one drawback to the good work it is doing—viz., its description lacks the essential elements of truth.

In quoting from that paper, after describing the supposed wretched condition of these hovels, you say that the sanitary authorities have not even tried to remedy them. This is utterly false, as the Local Board have compelled the owners of the properties referred to to do a great deal to them, and these improvements have been reported in the very paper that now says nothing has been done. Since reading the article I requested Mr. Bullock, the medical officer of health, to visit these places, which he did, and reported at the last meeting of the Local Board that they were in a fair condition. I also asked Mr. Hunter, the district medical officer of the Brentford Union (and consequently very often in these places), what he thought of them, and he replied that there was very little to complain of. The article goes on to say that one part of Isleworth is well known by the appropriate name of the Rookery. This is referring to the town wharf. Though I have lived in Isleworth all my life, I have never heard it called so, and I cannot find a single person that has.

I shall be glad if you will insert this contradiction to the article copied into THE LANCET from the *Richmond and Twickenham Times*, as if these reports remain uncontradicted they are likely to do much injury to the neighbourhood.—I am, Sir, yours truly,

ALBERT B. DAY, M.R.C.S.E., &c.,

Nov. 1879. Member of the Heston and Isleworth Local Board.